CLINICAL MEDICINE AND SURGERY

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• *Editor* •

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EDITORIAL

Eugen Fränkel

SOME men are born great (by virtue of the accomplishments of their progenitors or by other adventitious circumstances); some achieve greatness by their own unceasing efforts; while some have greatness thrust upon them. The subject of this sketch was in the second category.

Eugen Fränkel (who should not be confused with the two or three other famous German medical men of that name) was born September 28, 1853, the son of a physician in Neustadt, Silesia.

He received his medical degree from the University of Breslau in his twenty-second year (the thesis for his Doctorate dealing with the pathology of the cervical sympathetic) and began his practice as assistant in the ophthalmologic clinic of St. George Hospital, Hamburg. The conviction grew upon him, however, that the foundation of medical practice is pathologic anatomy, and his deep interest in this science led to his appointment as provisory assistant to the professor of anatomy in that Hospital, in 1876. Three years later his assistantship was fully confirmed, and when the Eppendorf Hospital was opened he was given the same rank in it. Here he began the researches which made him famous. With the founding of the University of Hamburg (1919), he was made a full academic professor.

As a lecturer and teacher, Fränkel attained a commanding position; and though he was, as a research worker and scientist, a representative of the theory of medicine, he never lost touch with the clinical applications of his discoveries, and made ward rounds and bedside visits until he was quite advanced in years. His knowledge of clinical laryngology was extensive.

But it is upon his work as a pathologist and bacteriologist that his fame is especially based. He was one of the first to recognize fully the importance of the close relationship between these sciences and to apply roentgenology to the study of pathologic anatomy, in connection with his study of diseases of the bones, blood and vascular system. His work on the bone changes produced by carcinoma, rickets, Barlow's disease, syphilis, and tuberculosis was outstanding, as well as that on the accessory nasal sinuses, larynx, and trachea, and on syphilis of the internal organs.

In collaboration with Much, he published an important study of lymphogranulomatosis; his work on typhoid and typhus laid a firm foundation for pathologico-anatomic bacteriology; he was the first to undertake specific treatment of "enteric fever" (1893); and his monograph on the etiology of gas gangrene (which became so important during the World War) was published in the same year.

Most of Fränkel's writings were in lecture form and were highly original in conception. Among his important monographs, other than those mentioned, were a "Microphoto-

graphic Atlas" and "Bacteriology at the Dissecting Table" (1924—his last work).

After three years of suffering from a malignant disease of one kidney, during which he carried on his important work almost to the end, he passed to his rest, December 19, 1925. But though his work in this life is ended, the memory of this indefatigable and illumined German medical scientist should not be permitted to grow dim.

There is nothing more absurd than practicality, if by that we mean acting without plenty of thought.—ERNEST WOOD.

Hartman's Dental Obtundent

WHEN a modern dentist undertakes a definitely surgical procedure, like an extraction, he usually gives his patient a general or local anesthetic; but by far the greater proportion of his work consists of the filling of cavities, and since it is not now customary to give an anesthetic for these minor operations, the patients must bear the pain caused by the drill (which is frequently severe) with what fortitude they can.

Of late, the newspapers and other periodicals have been featuring the announcement by Dr. Le Roy L. Hartman, professor of dentistry in the Columbia University Dental School, that he has discovered a formula which will temporarily desensitize or obtund the dentin of a tooth, so that drilling for the preparation of a cavity for treatment can be carried on without pain.

Dr. Hartman is to be congratulated upon his altruistic spirit in giving this formula freely to the members of his profession, instead of attempting to capitalize its powers for his personal enrichment, as is frequently done.

The formula of this obtundent solution is: Thymol, 1.25 part; ethyl alcohol, 1 part; sulphuric ether, 2 parts. It must be kept in a brown bottle and is effective only where the enamel has been removed and the dentin is exposed. It takes effect in from two to five minutes and its action lasts from twenty minutes to one hour—long enough to prepare any ordinary cavity. It should be noted that, if phenol has been used to sterilize the cavity, this must be entirely removed before the obtundent is applied.

The fact has been stressed that this solution is wholly unsuitable for self-medication in case of toothache, as it is highly irritating to the mucous membrane of the mouth. It should be applied only by dentists, in the course of their work.

It is to be hoped that this solution will prove to be so harmless that its use, in minor dental operations, will become universal, but some questions are being raised by thoughtful dentists, some of whom are refusing to employ it unless their patients will release them, *in writing*, from any untoward results which may develop. It is claimed that the solution is so irregularly volatile that, after the bottle has been opened a few times, the remaining material is no longer the original formula and cannot, therefore, be depended upon. Moreover, it has been suggested that this mixture may possibly exert a dehydrating action, which might jeopardize the integrity of the tooth structure and cause trouble a considerable time after its application.

Since physicians should be able to give their patients intelligent advice regarding any matter pertaining to their health, it behooves the members of the medical profession to watch this new development carefully and discuss it with their dental confreres so that, when questioned, they can answer with authority. If this formula proves to be as safe as it appears to be effective, a vast amount of human suffering can be alleviated.

No amount of experimentation can prove me right. A single experiment may at any time prove me wrong. —EINSTEIN.

The White Killer

TUBERCULOSIS killed 75,000 people in the United States last year, and half a million more—enough to populate a city the size of Washington, Minneapolis or New Orleans—are sick with that disease right now. The worst of it is that it kills people in the prime of life, especially men between 35 and 45 years and women between 20 and 30.

Much progress has been made, during the past generation, in reducing the death toll of the "Great White Plague," but there is still a long way to go, and the physicians of the country are the ones who must be chiefly relied upon in carrying on the increasing campaign of public education which is still urgently needed.

The people must be thoroughly taught that, if they tire easily, if they lose weight or suffer from "indigestion" without some obvious cause, or if they have a cough that "hangs on," they are *in danger* and should consult a competent medical man at once. Then

all the medical men should *make themselves competent* to diagnose and treat tuberculosis.

Those who are not especially accustomed to teaching should write to the National Tuberculosis Association, 50 West 50th Street, New York City, for suggestions as to how to go about it, and for circulars to distribute to their patients and friends.

This is a tremendous job, and the medical profession must not fail to do its part in carrying it to a successful conclusion.

The moment you question a fear, it disappears.—J. KRISHNAMURTI.

A Meat Diet

WHILE the zeal and vociferousness of certain vegetarians give the impression that that way of life is a religion, rather than a scientific regime, it has been demonstrated that people can live indefinitely on a purely vegetable diet, and even today there are well-informed men with a scientific training who still believe, in spite of Stefansson's experiences and experiments, that it is impossible for a human being to live for any considerable period of time on a diet consisting exclusively of meat, without suffering from a variety of disease conditions, ranging from intestinal toxemia through scurvy to arteriosclerosis. These ideas are no longer tenable.

From 1908 to 1916, or thereabouts, Vilhjalmur Stefansson spent most of his time in the Arctic regions where, for several years, he lived solely upon meat and water, without experiencing any decline in health or loss of physical soundness or stamina. But when he reported these things there were those who said it is easier to encounter a thousand liars than one miracle.

The hardy Arctic explorer did not care for that dictum, so he had himself meticulously examined by a committee of medical men, to find out just how badly he had deteriorated. The results of that study were reported by Dr. Clarence W. Lieb in the *J.A.M.A.* for July 6, 1929, and the upshot of it was that none of the supposed harmful effects of a meat diet were discovered.

The series of articles by Stefansson, which appeared in *Harper's Magazine* for November and December, 1935, and January, 1936, sets forth, simply and directly, the experiences of that hardy Icelander, and also those of several others. For instance, the two Scott expeditions to the Antarctic, which were outfitted along orthodox scientific lines, including plenty of lime juice and other "antiscorbutic" vegetables and fruits, failed rather disastrously because of the prevalence of scurvy; while the Shackleton expedition, hastily organized and without scientific backing, so that when the men arrived in the Antarctic they had to live entirely upon penquins and seals, came through with no scurvy at all. In fact, Stefansson reports several cases of well developed scurvy which were *cured* by an exclusive meat diet.

The story of the study which was made by a hand-picked committee of famous scientists, under the auspices of the Russell Sage Institute of Pathology, during which Stefansson and his companion, Karsten Andersen (who was the only other man available who had no psychic inhibitions against such a test), lived on an exclusive meat diet for a calendar year, under the conditions of an ordinary business man in New York, but under strict laboratory control, and emerged in better physical condition than when the test began, will make astonishing reading for those in whom the idea of the necessity of vegetables in the human diet is indoctrinated. In this test, even the ordinary animal products, milk, butter, cheese and eggs were excluded.

By "meat," be it understood, is meant, not, as some people seem to think, merely lean beef, but any food which comes from an animal, including plenty of fat and marrow, brains, organs and the soft ends of bones.

The soundest and healthiest teeth so far discovered are found in the mouths of Eskimos who have not been perverted by the white man's diet, but have lived on an exclusive meat diet all their lives, and in the skulls of similar peoples, who never saw a toothbrush or an orange and never heard of a dentist.

All this does not mean that we should all eschew forthwith the succulent spinach, the juicy lemon, the toothsome pancake and all of their ilk, but it does suggest that we have, on the teaching of "authorities," been worshipping intellectual graven images, and that it is time we opened our minds to a few new ideas in the field of dietetics. The human organism seems to be far more adaptable than we have given it credit for being and appears to be able to do very well on meat alone, or vegetables alone, or on a mixed diet. Stefansson agrees with some of the other unhampered thinkers among the students of nutrition, (see the article by Dr. Gershom Downs, in *Scribner's Magazine* for February, 1936), that

the individual appetite is a sound basis for the selection of one's food and is unlikely, *if given free play,* unhampered by economic restrictions, to lead one into the hygienic wilderness of the "deficiency diseases."

The Pink-Slip Strike

JUST about a year ago, something took place in this country that most people have forgotten about (if they ever realized that it was happening), but which was of such fundamental importance to every citizen that it seems necessary to call attention to it at this time when the whole land is seething with partisan political propaganda and the "man in the street" feels that there is nothing he can do about it. This occurrence was no less a matter than a modern demonstration that the people *actually do rule this nation,* if they are sufficiently interested to take into their own hands the power which is theirs.

The trouble began when Congress quietly slipped into the Revenue Bill a rider which would have required every income-tax-paying citizen to stand financially nude before his malicious or gossiping neighbors, his business competitors, and every blackmailer, golddigger, racketeer and other crook who fattens on his knowledge of other people's incomes and business.

The little pink slips which bobbed up along with last year's income tax blanks were a violation of one of our constitutional privileges and every clear-thinking citizen was incensed and troubled, but even then did not know what to do about it. It required a public-spirited voter—a leader—to harness this rising tide of resentment and put it to work, and such a leader appeared in the person of Raymond Pitcairn, of Philadelphia, national chairman of the Sentinels of the Republic, a nonpartisan organization pledged to the preservation of the Constitution and its guarantees to citizens.*

There is no space here to tell the thrilling story of how Mr. Pitcairn and the group which he leads put a spearhead on this great popular rebellion against a grave injustice and sunk the shaft of it into the vulnerable part (the fear of losing votes) of the case-hardened politicians in Washington. He told the whole tale, briefly and brilliantly, in the *Saturday Evening Post* for June 8, 1935, and it will pay all thoughtful citizens to look up that article and read or reread it. If it isn't readily available, Mr. Pitcairn or the Sentinels may still have some reprints to send to any who may ask for them.

The upshot of it was that the directed howl of protest from the aroused citizenry was so loud and persistent that a reluctant Congress repealed the law before it had a chance to do any damage, because the *people* directly and forcibly *demanded* such repeal.

The heartening thing about this incident is the assurance that the plain, inarticulate people of this country can, with a little judicious leadership, get about anything they want in the way of government done or undone, if they will just go at it. Anybody with brains and gumption enough to stand up and *lead* can be such a leader, when the public revolt is sufficiently strong and general, but in lesser matters, where the silent and unorganized majority of the voters is having its pockets picked by tight and vociferous minorities, there is a distinct place for a nonpartisan, nonpolitical organization like the Sentinels, and it might be a good idea if nationally-minded physicians would write and find out just what these people are doing and where they fit into the present scheme of things.

*The address of the National Headquarters of the Sentinels is 1367 National Press Bldg., Washington, D. C.

NEXT MONTH

Dr. Francis Ashley Faught, of Philadelphia, Pa., will present a logical and well-considered discussion of the important subject of periodic health examinations.

Dr. J. F. Ritter, of Maquoketa, Iowa, will explain his interesting methods of applying nascent endocrine therapy.

Dr. Ellis Powell, of West Monroe, La., in the third and last of his series of articles on hyperinsulinism, will describe, in detail, the dietary treatment of this condition.

COMING SOON

"Constipation and Hepatic Insufficiency," by Nathaniel Goldstein, M.D., Woodside, Long Island, N. Y.

"Analgesia Without Toxicity," by J. Krevin Leir, M.D., Jersey City, N. J.

LEADING ARTICLES

Further Studies on Colonic Fermentation

By D. C. Ragland, M. D., Los Angeles, Calif.

FOUR years ago, the idea of colonic fermentation as a causative factor in chronic disease began to take shape in my body-mind. Since that time this particular factor has been considered in every chronic case that I have studied. Needless to say I have been deeply impressed by the frequency with which my patients have complained of gas or gaseous distention of the abdomen, which may result from either fermentation or putrefaction.

In the beginning, I studied the hydrogen ion concentration of the stools, when there was a complaint of gas. In the majority of the cases I found the stool to be excessively acid, with some as low as pH 5.2.

LeRoy and LeRoy state, in their book, "Practical Colonic Irrigation" (The Vattenborg Systems, Inc., 1931), that the normal pH of the stool is 7.4. It is my understanding that they now feel that 7.0 or even 6.9 is more nearly normal. J. P. Brastad, M.D., of Anaheim, California, manufacturer of "Litmotone," gives the normal pH of the stool as 7 to 7.4. In any event, all are agreed that a stool pH of 6.0 or below is excessively acid. Also, all are agreed that an excessively acid stool results from fermentation, while putrefaction causes the stool to have an alkaline reaction.

It seemed to me, then, that this fermentation in the colon was retarding my patient's recovery, so I determined to seek his cooperation in matters of diet.

As the consensus of all nutrition chemists seemed to be that fermentation was the cause of acid stools, I began to consider ways and means of combating fermentation in the colon. In this study, I considered bacterial and yeast fermentation. I realized that most of the sugar (and I mean ordinary sugar) would be inverted and absorbed in the small intestine. I also felt sure that the sugar formed from the complete digestion of starch would also be absorbed in the small intestine. The question was, what fermentable things might reach the colon? The answer, to me, was starch and intact fruit cells containing either starch or sugar. I decided that *yeast* fermentation of *starch* and *bacterial* fermentation of *sugar* from fruit cells were the things to be overcome.

Cereal Grains

My first approach to this problem was to restrict the cereal grains in the diet, for the reasons mentioned in my former paper (see CLIN. MED. & SURG., Sept., 1935, p. 436). I think this can be well brought out by giving the record of a clinical case.

E. W. D., age 30, on June 2, 1931, complained of typical duodenal ulcer symptoms. There had been a small hemorrhage one year before and the x-rays showed a definite filling defect in the duodenal cap. This patient had been on a diet of well-cooked cereals, eggs, milk, pureed vegetables and Sippy powders. Despite this treatment, pain continued, as usual, three hours after food. No focus of infection could be found about the nose, mouth or throat. The only significant finding was the stool pH which, in spite of the Sippy powders, was 6.2.

All cereal grains were strictly prohibited. The diet consisted of fresh meats, eggs, fish, milk, cream, cheese and custard.

On June 15, 1931, the stool pH was 7.2. At this time the Sippy powders were not necessary to secure comfort. This patient had no distress, even though no food was taken from breakfast until dinner.

On June 22, 1931, finely-divided, cooked vegetables were added to this diet. The patient continued to be comfortable on this diet until October 22, 1931, when cooked fruits and raw vegetables were added to his menu. This diet was continued until January 25, 1932. At this time roentgenograms showed a normal duodenal cap. This patient is now, after four years, in good health and flesh, but he seldom eats any of the cereal grain foods.

At this point, I wish to say a word about the pain and hyperacidity in these ulcer cases. My hypothesis is this: Pain is caused by muscle spasm; the hyperacidity is a defense reaction. When there is fermentation

in the colon, the extended vagus (plexus of Auerbach) is irritated. Reflexly this stimulus is carried to the acid-secreting cells, in order that more hydrochloric acid may be formed to increase the acidity of the stomach and upper small intestine. According to Arnold, this increase in acidity inhibits the bacterial flora of the colon from ascending.

Apple Concentrate

My next approach toward the control of fermentation came while working with a syrup made by concentrating apple juice. By this time I had found that the lower margin of the liver was lower than normal when the patient's stool showed an excess acidity. Such patients always had gas. Other medical friends told me that this concentrate would control flatulence. The result of treatment with this syrup and without cereals can be well illustrated by the following case:

Mrs. M. H. W., age 25, on Oct. 1, 1931, came complaining of sharp, stabbing pains in the lower abdomen, with much gas and belching. Examination of the abdomen showed the liver to be 2 inches lower than normal, in the standing position. No foci of infection were found about the head. There was some acne on the chin and cheeks. Urine pH 5.6; stool pH 5.8; no other abnormal findings.

My thought was that the pains were due to gas. Apple concentrate was started, one ounce in hot water on an empty stomach each morning, and cereals were eliminated from the diet. On Oct. 28, 1931, the pains were gone, there was no gas, the liver was normal and the acne was gone; urine pH 6.7; patient well pleased with the results.

After this experience, it occurred to me that the elimination of the gas and fermentation products had increased this patient's resistance or defense mechanism, because the acne had disappeared. This therapy was used in all chronic cases until 1933. Other infections were treated during this time, with gratifying results. I wish to emphasize now that this procedure was carried out to increase the body's defenses.

The physiologists and hematologists tell us that the liver is a great repository for leukocytes. We can all agree that active leukocytes are potent factors in the body's defense mechanism. I have often asked myself, why do these cells leave the peripheral circulation and accumulate in the liver? Surely, they do not possess intelligence, as I understand that term. They do not "hide out" in the liver just to be playful. There must be a reason. To me, it seems that these cells congregate in the liver to destroy, by oxidation, the toxic aldehydes that are brought to the liver by the portal vein from the colon. To bring out this point, I wish to give a brief case history which was very interesting to me.

The patient, Miss E. S., age 17, on July 29, 1932, was found in bed with pain in the left chest. She had been sick for two weeks—temperature, 101° F.; pulse, 90; respiration, 26. The essential findings were: fluid in the chest up to the fifth rib, posteriorly on the left side, with obliteration of the intercostal spaces on the same side; x-rays showed bilateral involvement of the apices, with obliteration of the costophrenic angle on the left; the liver was two inches low, in the recumbent position; marked excess of indican in the urine, with high acidity; white blood-cell count, 6,200; polymorphonuclears, 59; lymphocytes, 27; large mononuclears and transitionals, 7; eosinophiles, 6 percent; myelocytes, none; her weight, when the sickness began, was 107 pounds.

Treatment: Rest in bed; elimination of wheat and other cereals from the diet, with a maximum of fruit juices, especially the concentrate of apple; no other medication was given.

By August 15, 1932, the temperature was normal and stable. On Aug. 22, the fluid in the chest had receded to the eighth rib. On Sept. 18, 1932, the fluid was down to the tenth rib, with good aeration of the left base. On November 7, the fluid was entirely gone; the excursion of the diaphragm was equal on both sides; the liver was at the normal level; weight, 127 pounds. At Christmas time the patient indulged in candy and pastry, so that, on Jan. 9, 1933, her weight went down to 124½ pounds, with the liver 1 inch low. There was some nausea and vomiting. She was cautioned about cereal grains again. On Jan. 26, 1933, her weight was 127¾ pounds and she looked and felt well.

The financial conditions of her family became so bad that this girl was forced to go back to bread and other wheat and cereal foods. She went rapidly down hill and was finally admitted to a County Sanitarium with what appeared to be "galloping" tuberculosis.

I can not help wondering how long it will be before our tuberculosis specialists begin to consider cereal foods as factors that have a definite retarding influence on the recovery of such patients.

Hyperpiesis

There is another class of cases that shows the toxic-cereal effect of Mellanby, but which I believe to be the effect of toxic aldehydes resulting from the fermentation of undigested starch. I refer to hyperpiesis. There are many drugs and gland preparations for use in these cases, but let us see what can be done by the simple prohibition of wheat. Here is a case:

R. P. D., age 65, on Nov. 14, 1933, complained of fullness and slight aching in the head. He feared that his blood pressure was high. After the history had been taken, which revealed nothing except that he had always been a big bread eater, his blood pressures were found to be 208/130, both standing and recumbent. The lower margin of the liver was 1¼ inch low in both positions. The pH of the breath was 5.7; of the saliva, 6.8; and

of skin, 5.5. All the other examinations were irrelevant.

Because of the swollen condition of the liver and the acidity of the saliva and skin, he was instructed to refrain from wheat in all forms. On Nov. 29, 1933, his blood pressures were 164/110; the liver margin was in the normal place in both positions; the distress in the head had ceased and the patient was feeling, as he said, "like a million."

Lloyd Arnold, in his paper, "The Bacterial Flora within the Stomach and Small Intestine" (*American Journal of the Medical Sciences*, Oct., 1933, No. 4. Vol. 186, p. 471), shows quite clearly that the health of the animal and his freedom from gastro-intestinal disease is directly dependent on the adequate acidity of the upper part of the small intestine. If this part is alkaline, the flora from the lower bowel appear in the duodenum, and even the stomach, within 5 minutes. He also observes that this upper intestinal acidity is lessened in middle and old age, as well as in hot, humid climates. This, no doubt, explains the extensive use of spices and condiments by the natives of tropical lands. It also suggests a reason for the gallbladder cases and many other degenerative conditions that come at or after middle life.

If lessening the acidity of the stomach and upper intestine permits the ascension of the flora from the colon, why would not increasing the acidity of the cecum and colon prevent this ascension of the colonic flora? Arnold claims that the acid gastric juice is more bacteriostatic than bactericidal. Would it not be the same with yeast? It seemed reasonable, to me, that acidification of the contents of the cecum and ascending colon would inhibit the growth and activity of both the yeast and the fermentative bacteria.

Organic Acids

The chemists informed me that maleic acid (one of the acids of the apple) has the power of oxidizing aldehydes and inhibiting the rancidity of fats. I recalled that apple concentrate contains some acid and that many cases were relieved of flatulence when they took it. Therefore, I had prepared for me a tablet containing maleic, malic and fumaric acids, coated with a special enteric coating. The idea was that these organic acids must enter the cecum as acids in order to inhibit the growth of yeasts and bacteria. These tablets have been in use now for more than a year, and the clinical results have been more than was expected. This procedure has effectively controlled fermentation in the colon in many cases.

Lloyd Arnold has clearly shown that a pH of 5.0, in the intestinal contents, will be bacteriostatic. The pH of the prepared tablet was found to be 5.0. The following simple experiment shows the inhibitory action of these fruit acids on yeast fermentation.

To some neutral distilled water was added sugar and white bread. This mixture was placed in each of two fermentation tubes. To each tube was added a milligram of fresh Fleischman's yeast. To one tube was added 2 tablets (the tablets contain one grain each of the mixture of these three fruit acids,

Fig. 1.

with a grain of charcoal). Both tubes were placed in the incubator for one hour. At this time the tubes were photographed (Fig. 1).

The tube on the left shows two inches of gas in the closed arm. The tube on the right, which contained the fruit acids, shows no gas at all in the closed arm. It seems quite clear, then, that these fruit acids inhibit yeast fermentation.

Allergy

Without reviewing the extensive literature on the subject of allergy, I wish to record a suggestion which is the result of two clinical experiences.

Two patients presented themselves, both having the common complaint of gas and fermentation in the bowels. Both were allergic cases. Doctor B. had been very sensitive to egg yolk for many years, while Mrs. O. had urticaria from strawberries. This condition had also existed for years.

Doctor B. was instructed to refrain from eating cereal grains. In addition he was given the acid mineral solution of hydrochloric acid, according to the formula of Dr. Walter B. Guy, of St. Augustine, Florida. With the work of Arnold in mind, I felt that this solution, by mouth, would keep the acidity of the stomach and duodenum high. Mrs. O. was also instructed to discontinue eating cereal grains, but she was given the malic acid compound tablets. Both cases continued their treatment for several months. Both cases were apparently desensitized, because Doctor B. can eat eggs freely without any allergic reaction, while Mrs. O. is having a grand time eating strawberries, without having hives.

I fully realize that two cases are only suggestive, but I do feel that the allergists would

do well to investigate, more fully, colonic fermentation as a cause for that puzzling phenomenon called allergy.

I have recorded these observations with the hope that others will work on this subject of colonic fermentation. Some one may find a better way to control this fermentation, with the associated toxic aldehydes, and thereby give comfort, as well as health, to many thousands of people.

My objectives have been: (1) To reduce the amount of fermentable material that may reach the colon; (2) to inhibit the growth of yeast and fermentative bacteria in the colon; and (3) rapidly to oxidize any toxic aldehydes that may be formed, so as to conserve the liver.

When these things have been adequately done, we have removed a most active retarding influence upon our patient's defense mechanism.

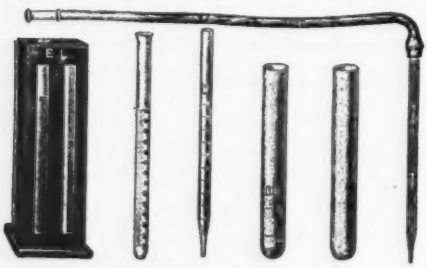
430 So. Western Ave.

Testing Blood Sugar in the Office

(For Diagnosis of Hyperinsulinism)

By Ellis Powell, M.D., West Monroe, La.

THE purpose of this article is to show how, without postgraduate training, elaborate laboratory equipment or highly trained technical assistance, the backwoods doctor, as well as his city brother, can study the food and fuel supply of the brains of his patients, explaining, in detail, how $10.00 worth of equipment can carry one into the province of the nutritional disturbances of the brain, so that one may recognize cases of cerebral malnutrition or hyperinsulinism in one's practice and thereby may solve many of the hardest problems in psychiatry and conduct many patients along the road back from mental aberration to mental normality.



Courtesy, Arthur Whiteman Corp.

Fig. 1.—(Left to right) Hard-rubber stand, containing one color tube; accurately graduated tube for color test; Mohr's pipette, 1 cc., graduated in tenths to tip; graduated tube with marks at 1.0 and 2.5 cc.;* boiling tube;* pipette with marks at 0.1 and 0.2 cc., with rubber tube and mouthpiece.* (*Dr. Powell has extemporized cheaper substitutes for these pieces of apparatus.)

There is no mystery to it—in fact it is very simple. Since "the brain lives exclusively on sugar," and since "recent work points to carbohydrate as the sole source of energy of this highly specialized tissue," it becomes necessary to determine the sugar concentrations in the blood. As the sugar is carried to the brain by the blood stream, it appears logical to study the sugar in the blood, and by so doing we determine the quantity of brain food as well as the quantity of fuel.

To determine the amount of sugar in the blood, we use a Leitz's micro-saccharimeter and employ Dr. Epstein's technic, which is an adaption, on a very small scale, of the one devised by Lewis and Benedict for estimating the sugar content in the blood. It is based on the fact, observed by Dehn and Hartman and also by Lewis and Benedict, that picric acid and sugar, in the presence of an alkali (sodium carbonate) give, on heating, a color reaction which is proportionate to the amount of sugar present.

Apparatus

The essential apparatus used is shown in Figure 1, along with some which are useful, but not necessary. A few "odds and ends" are needed also, and the prevailing price of the complete essential equipment is here given:

1 Hard-rubber stand	$3.30
2 Color tubes (A & B)	3.50*
1 Graduated tube	1.50
1 1-cc. pipette (1/10)	.65
2 Test tubes	.05
1 Alcohol lamp	.35
1 Small funnel	.22
Filter paper	.19
	$9.76

We still have 24 cents out of our $10.00 with which to purchase 2 or 3 drams of chemically pure (not U.S.P., but C.P.) picric acid from a laboratory supply house. This is placed in a 2- or 3-ounce bottle and distilled water is added so that a saturated solution results. A friendly druggist will gladly contribute an ounce or two of a 10-percent solution of sodium carbonate and a dram vial containing

*Standard color tube "B" is never needed in this work, but is allowed so that one may have a complete sugar outfit to do work with high sugar levels (diabetes) also.

a *few* crystals of *sodium* citrate. Thus we have the full set up, have not exceeded the limit of $10.00, and will find that it is all the equipment necessary.

As one goes on one's rounds, and while in the office, one must not forget to have the dram vial handy, and when a patient is encountered whose brain or nervous system is malfunctioning, simply obtain 8 or 10 drops of blood from a convenient vein, with a hypodermic syringe, and transfer it to the vial. Upon returning to our $10.00 laboratory, I will demonstrate how to determine the quantity of food and fuel for the "master tissue of the Master's masterpiece," without the benefit of postgraduate training and without the aid of highly trained technicians.

Technic

With the 1-cc. pipette (which is graduated in tenths of a cc.), obtain and place in the test tube:

0.2 cc. of blood and
0.8 cc. of water; mix then add
1.5 cc. of saturated solution of picric acid.

Filter or centrifuge; place 1 cc. of the clear filtrate or the supernatant fluid in a boiling tube and heat it *carefully* over a flame. The contents of the tube must be evaporated until only 2 or 3 drops of the solution remain. Then add 0.5 cc. of the 10-percent solution of sodium carbonate and evaporate again to 2 or 3 drops. At this time the color change occurs.

The solution is then transferred to the graduated tube; the boiling tube is rinsed several times with water (using only 2 or 3 drops at a time) and the rinse water transferred to the graduated tube, until the boiling tube has become perfectly clean of the test solution. The volume of the fluid in the graduated tube is then made up to the mark 50 on the graduated scale, by the addition of the necessary water.

Now we are ready to determine the quantity of sugar in the blood of the patient. Place the graduated tube (containing the test solution) in the hard-rubber stand, and beside it place the standard color tube "A." The purpose, now, is to make the contents of the graduated tube match in color that in the standard color tube "A," which is the real trick.

The *stand* contains the unknown and tube "A," and these are briefly viewed before a direct light (the window). It will immediately be observed that the test solution is darker. Add a sufficient quantity of water to make the graduated tube roughly match the standard color tube, but *be very careful to leave the graduated tube a shade or two darker.* Then set them aside for a moment to rest the eyes. Upon being brought to the light for the second time, one will observe that 2 or 3 drops of water can safely be added. Do this and set aside again for a moment. Again one will probably observe that the graduated tube is only a trifle darker, and 1 or 2 drops of water are added. Upon observation a moment or two later, one decides that the two colors match; then the reading from the graduated scale gives the quantity of blood sugar present, expressed in milligrams per 100 cc. of blood.

While watching the colors, do not gaze long and intently at them and worry and ponder over it. Rest the eyes sufficiently, then make a brief observation and promptly decide that they do or do not match, remembering that when one is unable to decide they probably match. Always run two tests on each specimen, match the colors, and after both tests are matched, obtain the readings and thereby check their accuracy. If they are within a few milligrams (5 or 6) it is satisfactory; if not, run a third test—but this, after a little practice, is rarely necessary.

In order to obtain practice with a known solution one may make a 200 mg. glucose solution by adding 15 grains of C.P. powdered dextrose to a pint of distilled water; and a 100 mg. solution may be made by adding 15 grains of C.P. powdered dextrose to one quart of distilled water. If a test is run on a "blank"; i.e., if distilled water is substituted for the blood, the reading on the graduated tube will be "light" at 50 mg. If one wishes to see the color of a 75 mg. solution one may substitute, for the 0.2 cc. of blood, 0.1 cc. of the 100 mg. solution and 0.1 cc. of distilled water, and the reading will be approximately 75 mg. With these various combinations one can check one's blood sugar testing ability (and incidentally the accuracy of one's druggist), and perhaps gain confidence in both.

Now for some high points, short-cuts, timely suggestions and advice.

If sodium citrate is used as an anticoagulant, the blood must be examined within an hour or two; or 10 mg. of sodium flouride per cc. of blood is said to prevent changes in the sugar values of sterile blood for at least ten days.

Blood obtained directly from a vein is routinely used as standard and all determinations are based thereon. Blood obtained from the finger (as recommended by some) gives higher and unstandardized readings.

I wish to emphasize the necessity of using *chemically pure* picric acid, which must be purchased from a laboratory supply house, as U.S.P. picric acid will certainly not do. It is also well to remember that the reaction occuring between the blood and the picric acid will be hastened, on cold days, by gently warming the contents of the tube.

The transferring of the evaporated solution and the repeated rinsing will be easier if a test tube is not used. I use the bottom half of a 10 cc. ampule; and the transferring

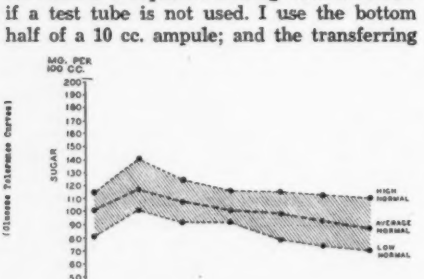


Fig. 2.—Glucose (dextrose) tolerance curves.

and rinsings are far more quickly done with a medicine dropper.

A great deal of time will be saved by making a 1.5 cc., a 1.0 cc. and a 0.5 cc. medicine dropper. This is easily done by running the measured amount from the graduated pipette into the dropper and marking the proper level with an ampule file. The 1.5 cc. dropper remains in the picric acid bottle; the 1.0 cc dropper is used to obtain 1.0 cc of the supernatant fluid to be boiled; and the 0.5 dropper is kept in the bottle of sodium carbonate solution.

To those who are rusty in laboratory work, I should probably explain such terms as "fasting sugar levels" and "glucose tolerance tests and curves."

A fasting test refers to the blood-sugar test that is made while the patient is fasting—ordinarily before breakfast and with care that nothing whatsoever is eaten before the test. Normally this is found in the immediate vicinity of 100 to 110 mg. per 100 cc. of blood.

A glucose tolerance test refers, of course, to the patient's tolerance to a standard quantity of glucose, and is determined as follows: A fasting test is made; then 100 Gm. of glucose (dextrose) is given orally; and each hour thereafter, for 6 hours, a blood-sugar test is made. The readings thus obtained are plotted on graph paper, and high-normal, normal, and low-normal glucose tolerance curves may be seen in Figure 2.

The glucose tolerance test must be carried out for *six full hours*, otherwise many cases will be missed. In a person with normal blood sugar, relative starvation will not cause the levels to be below normal, as a reserve of sugar is present in the liver and the body can convert protein (and some fat) into sugar, if it becomes necessary to do so to maintain normal levels.

I frequently check new patients, in addition to the tolerance test, with a complete study following their regular meals. This is often informative.

Do not forget that a sugar test obtained during the "spell" is more important than all others.

After the patient is under dietary treatment, I do not make any more glucose tolerance tests, as I think it then detrimental, but I observe the progress of the patient by means of the fasting sugar levels, and perhaps by tests done between meals to see how they are holding up on the diet.

The doctor, himself, should become familiar with this simple, easy and inexpensive test, and later, perhaps, train his technician. I have observed that some expensively equipped laboratories apparently employ color-blind technicians; and since the physician must observe the patient, why should he not observe the color tube in connection therewith.

The average "sugar chemist" who studies diabetes, deals with sugar concentrations from a low-normal of 80 mg. to perhaps 500 mg.; but in this work the readings will ordinarily be limited to the 70-60-50 and therefore we do not have much latitude. A few points mean a great deal and perhaps decide whether the patient's brain has a low-normal food supply, or perhaps is hungry and malfunctioning due to a shortage of its source of energy. The fine point decisions may be easily made if one follows the technic described while matching the colors—in fact my "sugar chemist," who did not know a micro-saccharimeter from a microbe, was successfully doing blood-sugar tests after a little practice, and now excels her teacher.

From this inexpensive equipment and expenditure of a little time, we frequently hear such sincere remarks as, "You have regenerated my son"; "I would not have my wife as she was for any amount of money"; and "Your brain feeding ideas returned my wife to me and the mother to my daughters." Such remarks cause us to be glad of our small investment. It has proved to be interesting, practical, remunerative, and humanitarian in my practice, and can be the same in that of any interested and sincere physician.

RULES FOR SPEECH

Put away sarcasm from your speech. Never complain. Do not prophesy evil. Have a good word for everyone or else keep silent.—HENRY WARD BEECHER.

Three Types of Clinical Cancer on One Patient

By Herman Goodman, B.S., M.D., New York City

ALTHOUGH one or another type of skin cancer is prevalent enough, it is unusual to have more than one type on the same patient.

I herewith report the case of a male patient in whom I suspected, on clinical evidence, the presence simultaneously of three separate and distinct clinical types of cancer on widely separated parts of the body. On histologic examination, confirmation of the presence of the Bowen's precancerous dermatosis on the abdomen was found; the section from the basal-cell (definite) could not be diagnosed for technical reasons; and the third suspect proved to be a nevus, pigmented and simulating a melanoma.

In a wide clinic service at an institution devoted to lesions of the skin and to cancer, we have not found many examples of more than one type of skin cancer growth on the same patient at the same time.

Case Report

Wm. S., aged 54, came to the Stuyvesant Square Hospital on January 19, 1932. He was a native American, married and residing in the suburbs.

The lesions which brought him to the hospital were on the left side of the nostril and to the right of the midline of the mid-abdomen. On physical examination, we located a third lesion on the third right toe.

Personal and Family History. The patient had no sicknesses nor diseases. At one time he had been hit by a trolley car and has lost the sense of smell. He weighed 219 pounds and lost no weight. There was no known cancer or tuberculosis in the immediate family, although a half brother had tuberculosis.

The lesion on the abdomen began as a mole some 10 or 15 years previously. He noticed that it enlarged gradually and that a crust formed from time to time. The local application of iodine had no effect.

The lesion on the side of the nose had started, about 18 months previously, as a small wart, and a crust formed over that. From time to time, he used ointments of one kind or another, without relief. There was no history of the toe lesion.

The clinical diagnoses were: (1) On the left side of the nose, epithelioma; (2) on the abdominal wall, Bowen's precancerous dermatitis; (3) on the toe, melanoma.

Photographs were taken of all the lesions on the first day. Also, a Wassermann blood test was made, which was reported negative.

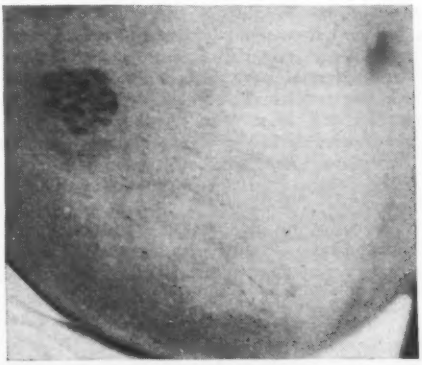


Fig. 1.—(Above) Bowen's Disease on Abdomen.
Fig. 2.—(Left—Below) Clinical Basal-Cell Epithelioma on Nose.
Fig. 3.—(Right—Below) Clinical Melanoma; Histologically, Nevus.

The type of lesions was considered best for surgical care and the patient was referred to the surgical department.

The surgeons thought that the two first lesions could be best treated by radium; the toe lesion was excised and a full-thickness graft was supplied. On May 13, 1932, the surgeons removed the growth from the toe and the lesion from the abdomen. After various vicissitudes, the area healed and the graft area also granulated and healed.

The pathologist's report on the lesion removed from the toe was not in agreement with the clinical interpretation either of our dermatologists or of our surgeons. The pathologist reported the lesion as pigmented nevus and described the gross lesion as a pigmented growth, elevated, about 1 cm. in size and surrounded by rim of skin 2 to 3 cm. broad. Un-

der the microscope, the growth was seen to consist of nevus cells in nests with pigment.

A section was taken from the abdominal lesion for histologic study, on the day of admission to the skin clinic. The pathologist reported that the section taken from the right lower quadrant of the abdomen, measuring about 3 by 3¼ inches, raised, crusted or scaly and non-inflammatory, showed on section: "Very irregular epidermis with irregular epidermal pegs. The individual prickle cells are swollen. The nuclei are very much swollen and often take up the entire cell; they are hyperchromatic; there are some mitotic figures. There is no infiltration of prickle cells. Diagnosis: Bowen's disease of the abdomen."

The lesion of the nose was also sectioned from the raised nodule with its pearly border. It was distinctly a clinical picture of basal-cell epithelioma. The tissue was not sufficiently satisfactory for histologic diagnosis.

The radium department treated the lesions on the right abdomen and on the left side of the nose. Both plaques and needles were used. On subsequent examinations, the reaction was held to be satisfactory and the lesions examined two, four and six months later showed no activity.

The patient was seen as recently as October 3, 1934. There was no evidence of recurrence of the nose lesion. There was a slight scaling and an area which was dry within the left nostril. The abdominal lesion showed no sign of activity. The toe lesion site was soft and pliable, though there was a slightly discolored scar. The patient was asked to return in six months. The final disposition of the case was, "*cured.*"

18 E. 89th St.

Electrocoagulation of Adenoids (Adenoidecthermy)*

By L. L. Doane, M.D., F.A.C.S., Butler, Penna.

THE successful removal of tonsils by the high-frequency current having been accomplished, it seemed desirable that a similar method be worked out for the removal of adenoid tissue in the naso-pharynx.

The first consideration was the designing of an instrument which would expose such tissue to direct vision, and at the same time protect adjacent structures from injury by the high-frequency current. My first models were constructed before I had seen the Yankauer instrument. As now perfected it is believed that this instrument offers a more adequate view and a larger field than the Yankauer; and in addition it has the advantage of being constructed as a dispersive electrode, adaptable to the high-frequency current. When placed for action it surrounds more or less completely the tissue to be coagulated, hence the current is spread out, so to speak, from the centrally located active needle, and injury to the periosteum is less likely to occur than if the dispersive electrode were placed on the back or around the arm; besides this, as also with my method of tonsillecthermy, the terminal electrodes being near each other, with little intervening tissue, the resistance is slight and a mild current suffices. The accompanying illustration (Fig. 1) will give a better idea of the instrument (adenoscope) and accessories than any amount of description.

*This word I believe to be etymologically correct—"heating or burning out." It corresponds to the word I have adopted for the removal of tonsils by electrocoagulation—"tonsillecthermy."

Technic

Any of the local anesthetics ordinarily used in tonsil coagulation are satisfactory, and the one selected is applied several times to the adenoid growth and adjacent parts, at two-minute intervals.

While the patient is in the ordinary sitting posture, the tongue may be depressed by the operator, the assistant or the patient, and the beak of the adenoscope gently introduced behind the soft palate, the latter being relaxed, if possible. Then the patient is told to lean forward and hold the head well back, breathing quietly meantime. The handle of the instrument is depressed, with a simultaneous movement gently upwards, till the adenoid tissue comes into view. The long, tip-curved needle, held tightly in the handle so that it will not turn on its axis, is now introduced into the adenoid tissue, care being taken that the point does not touch the periosteum (it is well to lift up the tissue a little), and the current is applied, by foot-switch contact, for one or two seconds (see Fig. 2).†

The patient is instructed to breathe through the mouth during this procedure and, as there is usually little pain, the operator may complete the work at once. Should there be much

†Courtesy, McIntosh Electric Corp.

Fig. 1.—Doane's Adenoidecthermy Set, in case.

adenoid tissue (which is seldom the case in an adult), one or more additional sittings may be indicated. No after-treatment is necessary.

As a routine measure, I am not advocating this method for children, as the average child would not submit to it under a local anesthetic. However, as the usual operation with a curet or adenotome is followed by profuse bleeding, in the majority of cases, and not infrequently this blood may ill be spared, it may, if practicable, be used as a conservative measure. At the same time the tonsil, if hypertrophied and not manifestly diseased, might be given a coagulative treatment and materially reduced in size.

Sinusitis

I wish, also, to present here a method for the treatment of sinusitis, both acute and chronic, which has given me, in the modest number of cases in which it has been tried, considerable satisfaction. Similar methods have doubtless been used, but this, in detail, I have not seen described.

After the diagnosis has been established, the patient lies upon a large auto-condensation pad, which is connected with the Oudin terminal of the high-frequency machine. A foot switch is required. No anesthetic is used, as we wish the normal sensitiveness of the mucous membrane to be preserved, as a guide to the strength of current that may properly be given.

I have selected the non-vacuum naso-electrode, but the vacuum type might do as well. To facilitate introduction, some sort of jelly (not oil) is applied to the tip. The spark-gap is open moderately, and the electrode, held in the bare hand, is brought to touch that of the patient. A very mild spark only is expected. Adjust the spark-gap to produce this.

Standing (or better sitting) at the patient's right side, with the current off, the electrode is carefully introduced with the right hand (the fingers of the left elevating the nasal tip), the beak turned downward. The doctor's right arm should rest on the patient's right, but it will need to be well insulated. Remove the left hand from the nose and avoid all contacts while the current is on.

Fig. 2.—Showing Technic of Adenoidecthermy.

Applying the current by means of a foot switch for two minutes; cut it off and apply it to the other side in the same manner for the same time; remove the electrode and apply it to the first side treated with the beak up, for two minutes; repeat on the other side; then apply as before, to each side, with the beak down, again for two minutes. This usually ends the treatment, although I use the fingers outside over the affected regions for a few minutes in some cases, as this means of using the indirect current is soothing and perhaps has a generally beneficial effect.

The operator's hand should be kept steady when using the electrode, and the instrument held lightly. The patient should experience no pain, and if he does, the electrode should be slightly withdrawn. If this does not relieve, reduce the current, for nothing beyond a slight discomfort should be felt. The treatment may be given daily or twice a day, in acute cases; two or three times weekly in chronic cases.

The first beneficial effects anticipated are, in acute cases, relief of pain, with or without more secretion; in chronic cases, altered secretion, changing from purulent to non-purulent, then gradually ceasing.

I should appreciate receiving reports from any who may decide to try this method.

357 No. Main Street.

FALLACY OF THE ALL-EMBRACING "STATE"

The notion, now preached and taught with much vehemence in various parts of the world, from Russia, Germany and Italy to Mexico, that there is somewhere a hypothetical, invisible and all powerful State, which is antecedent to, superior to, and in necessary control of, every individual life, and all individual effort, is so far below the level of established human knowledge that it is not easy to describe it in language that would be deemed parliamentary.—NICHOLAS MURRAY BUTLER.

The Present Status of the Ambulant Treatment of Hernia

By Paul Levi, M.D., Gowanda, N. Y.

A GENERAL survey of our present knowledge of the ambulant treatment of hernia is needed, on account of the widely divergent views which are held by various groups of physicians and on account of the lack of coordinated work among those workers who have been interested in this method. The past five years have witnessed a revival of this once obsolete method, but it is apparent that this revival is influenced by various important factors which this article is intended to illustrate.

The development of surgery in the past decade has definitely been away from radicalism and toward a guarded attitude of minimal interference with natural healing tendencies. This attitude finds expression in the utilization of the radiation treatment in toxic thyroid, the hyperthermic treatment of pelvic infection and in the new methods of prostatic surgery. The development of these methods tends to replace hospital surgery by ambulant methods. Under the force of economic conditions this search was intensified. The wide acceptance of such methods as the injection treatment of hemorrhoids and varicose veins is due, not only to its practical value, but to the appeal which an ambulant method naturally has to many people. This attitude, together with the widespread dissatisfaction about the poor outcome of many operations, is the background for the revival of the ambulant injection method of treating hernia.

Results of Injection Treatment

The literature of the ambulant hernia treatment contains a good number of articles which highly advocate it, but it is surprising that not one paper has been published which, on the basis of facts and well-controlled records, investigated the problem. The articles contain reports about the work with the authors' "pet" solutions, and although they seldom contain a full and proper description of the nature of the hernia treated, they frequently end with reports describing perfect results in nearly every case. Cures in 98 percent of cases are so commonly reported, and the results are described as so much better than those of surgery, that the open-minded surgeon simply refuses to believe them; and if, in addition, he himself, in his own practice, has operated on cases which were unsatisfactorily treated by injection previously, his confidence in these reports is thoroughly shaken. And if he reads some of the advertising literature on the subject, a good deal of which has been unethical, he quite naturally refuses to have anything to do with this kind of work. One may ask, however, if this situation is sufficient reason to discard a method which should find a permanent place in medical science, if it brings about clinical cures in a high percentage of cases.

One difficulty is that the scientifically-minded physician is not inclined to consider the patient's economic point of view. A surgical herniorrhaphy, if properly done, involves a disability period of six weeks, with a heavy outlay for hospital expense. A study of the records of organizations handling workmen's compensation shows the immense load which hernia annually throws on the shoulders of employers, and indirectly on the consuming public. If we compare with this the expense of ambulant treatment, which eliminates hospitalization and, in most cases, does not require any absence from work, the economic factor will assume greater importance.

The history of surgical herniorrhaphy shows a series of progressive developments, which culminate in the present high record of good results; but nobody knows better than the doctor who is interested in the ambulant treatment of hernia, that many more hernias recur after surgery than is commonly accepted. One cannot but feel that published records from high-class institutions report results considerably above those obtained by the average surgeon. Opinions expressed in some quarters, that there are from 10 to 40 percent of recurrences, may seem extremely high; but if a survey of results of all herniorrhaphies in a large area could be made, results would be obtained which would hurt the surgeon's pride. A reliable and complete survey of hernia cases, treated by any method, is very difficult, as many patients with recurring hernia do not submit to re-examination.

Skill Required

The injection method of treating hernia requires a technical skill considerably above that required in any other ambulant method, with the exception of ambulant prostatic surgery; but persons interested in the sale of advertised solutions sometimes try to convince the doctor that, with a few minutes of study, he can successfully master the technic.

First of all, successful injection technic requires a perfect understanding of truss fitting; but there are only very few good truss fitters, and among them hardly any physicians. As the success of the hernia treatment depends entirely on a truss which retains the hernia during the entire course of treatment

(which takes from two weeks to three months), it can be easily understood that truss fitting is the weakest point in the successful performance of this work. My experience in the past five years, convinces me that the injection treatment stands or falls with the proper application of the truss. The truss fitting involves, besides the purely mechanical factor, an important psychologic one, because it eliminates from treatment all those patients who cannot or do not want to stand the initial discomfort of a well-fitted truss.

To cure a hernia by injection, it is necessary to close the hernial sac at the internal ring, and frequently also to obliterate the sac. Closure of the ring is possible only if the injection area reacts strongly to proliferative irritation. Obese individuals, with weak and flabby abdominal walls, usually do not fulfill this requirement. If, in these individuals, the inguinal canal was continuously dilated and stretched by a large hernia over a period of years, no amount of irritation can produce connective tissue union strong enough to overcome the intra-abdominal pressure. Although surgery in these cases shows many failures, it seems that muscular union (surgical) offers a better chance of permanent cure than fibrous union (ambulant). This consideration eliminates from the treatment those cases of long-standing hernia with large openings, where a permanent approximation of the opposite walls of the ring cannot be expected.

Only strict attention to the internal inguinal ring as the focal point of attack can produce results. Not only must the truss retain the hernia at this point, but any injection which does not fully close the sac at this point will result in failure.

A few men inject in the general direction of the abdominal opening; others inject into the walls of the ring itself, thereby attempting a softening of the structures. These methods base their existence on the idea that they will prevent the hernia from protruding by the production of adhesions in the hernial canal. In other words, they attempt to produce a natural truss pad in the canal. These efforts result in a high percentage of recurrences, because the adhesions yield to the constant inner pressure.

The methods of approach to the internal ring are (in indirect inguinal hernia): First, the direct route through the abdominal wall; second, the route following the spermatic cord through the entire length of the canal; and third, injection slanting downward through the abdominal wall toward the index finger which is invaginated in the canal. Each one of these methods is of value, but the exclusive use of any one is responsible for many failures, and especially the third route is responsible for many complications, with which the injection treatment of hernia is credited.

As a hernia can be cured only if the internal ring is properly located and the injection successfully directed to that point, it is evident that the minimum amount of injected material which brings the desired result is the ideal treatment. If, due to poor technic or anatomic difficulties, the internal ring is not closed properly, the physician is tempted to resort to the injection of larger amounts of solution, which might eventually bring about obliteration of the canal and a closure of the ring, due to the diffusion of the solution over a large area. Occasionally this procedure will lead to stenosis of the cord and interference with its circulation.

That peritoneal irritation and formation of adhesions may be the result of improper technic, and especially may follow over-treatment, is evident from the German literature. One good reason why the American literature is silent about this type of complications is the fact that the German observations are based on injections of alcohol, where 100 to 200 treatments frequently are required; whereas American solutions produce the maximal therapeutic effect after 6 to 12 injections. It is impossible to say how frequently stenosis occurs, as it can be found only upon subsequent herniotomy.

The proper approach to the internal ring is essential, if damage to important structures is to be avoided. Injection through the whole length of the canal to the internal ring is correct, because through this route it is relatively simple to avoid puncturing the cord and blood vessels. While injection through the abdominal wall to the internal ring can be made safely, if one is familiar with the anatomic details, puncturing of the cord and other structures cannot be safely avoided if the injection is made through the abdominal wall towards the tip of a finger that is invaginated in the inguinal canal somewhere between the external and internal rings.

Obliterative Solutions

Many solutions have been devised for the treatment of hernia in recent years, and a selection, therefore, is difficult for the beginner. However, their active principle usually is the astringent factor of tannic acid and the irritating quality of alcoholized phenol. A well-balanced solution must be (1) active in small amounts, to avoid the surface spread of large amounts of fluid; (2) it must not be toxic nor cause systemic reactions; (3) it should be painless; and (4) it must be bactericidal, because an aseptic technic is practically impossible in this work.

Some of the highly commercialized preparations base their claims on the fact that they do not contain phenol. It is common know-

ledge that the phenol effect on tissue can be counteracted by alcohol to any desired extent, and practical experience has demonstrated that a combination of these two agents can be used safely in this work. Besides the neutralizing effect of the alcohol on the phenol, it also imparts to the solution its tendency to spread over a surface. Phenol, like oil on a dry surface, does not spread.

It is not the purpose of this article to describe any of the solutions and I refer the reader to the special articles on the subject, of which there are now a number. It may be said, however, that several solutions which are in use today are very efficient and fulfill necessary requirements. As a comparative study of their relative value has never been made, this important phase of the problem cannot be discussed with authority, and the claims in favor of certain solutions are obviously exaggerated. It is also certain that certain advertisements are responsible for much of the inefficient injection technic in this country, because their common "sales talk" is a misstatement about the simplicity of the method.

Selection of Cases

In my experience, clinical cures with the injection treatment of hernia can be obtained in cases of short duration with a narrow canal, and in individuals who are healthy, not very obese, and willing to cooperate. In the vast majority of these cases, clinical cure can be expected. Umbilical hernias within this classification are easily treated; direct inguinal hernias do not respond quite so well; and postoperative incisional hernias should not be treated by this method. Femoral hernias usually respond well.

In order to arrive at correct figures, it would be necessary to conduct a large and well-controlled series of cases. My estimation of over 75 percent cures is based on over 150 cases within this classification, but a much larger number of cases is required for scientific evaluation. The majority of patients coming to the physician's office, however, present hernias which are not good risks for injection. The average man who applies for this treatment today is of the "I am ready to try anything" type, who has ordered all varieties of mail-order trusses, but never wore them. As this type is usually self-centered and therefore non-cooperative, a reliable evaluation of the injection treatment cannot be made with this clinical material. If patients are treated who do not fall within the scope of the above strict selection, the percentage of permanent cures dwindles rapidly to an estimated 10 percent in the obese individual with a large hernia.

That faulty technic of the injection treatment can produce disastrous results is certain. Abscesses, as a result of asterile injection, fecal fistulas, peritonitis, thrombosis of the femoral vessels and stricture of the cord have occurred, how frequently nobody knows. The literature (with the exception of some German reports) is silent about it. It is my opinion, based on over two thousand injections, that good technic will safely avoid these complications, with the possible exception of an occasional stricture of the spermatic cord. As only herniorrhaphy following unsuccessful injection treatment would reveal its presence, no authoritative statement about the prevalence of stricture can be made, but I do not know of any such instance in my own series.

Lack of Scientific Study

It is obviously difficult to survey our present knowledge of the injection treatment without arriving at the conclusion that the entire problem has been lacking scientific supervision and investigation throughout its history. Perhaps the main responsibility for this rests with the first man who developed a technic similar to the present. Heaton, of Boston, in 1850, refused to have a committee of physicians witness his work and denied them access to his formula. He closed the method to the legitimate medical profession and threw it into the hands of irregulars.

This situation was aggravated by another factor. It is my personal opinion that only a very few men ever were really successful with the injection treatment of hernia. The majority undoubtedly were disappointed about the poor outcome of their own few cases, which were not selected with the understanding which only experience can give. With few exceptions, the results obtained by beginners are unsatisfactory. However, after many trying experiences, I came to the conclusion that the treatment really is valuable in well-selected cases. Furthermore, it is my opinion that the reports in the literature —those which claim 95 to 100 percent of permanent cures without strict selection of cases—cannot stand the acid test of close investigation. I also am convinced that much of the injection work done today is done by men not at all qualified to do it. Most of them were erroneously led to believe that the technic is simple and can be learned in a short time.

Much of the blame for the unhappy situation in which the injection treatment of hernia finds itself today rests with organized medicine and some editors of its official publications. It is the general and well-founded opinion of those earnest physicians who have devoted years of study and experimenting to this work, that it is impossible to have their results published in official journals, if they report favorably to the method. This opinion is based on so many and identical experiences that it is considered useless even to submit these articles for publication.

The probable excuse, that many of these papers contain exaggerated claims for the method, cannot be accepted as long as no serious effort has been made to disprove these claims on the basis of scientific investigation before an unbiased forum. Indeed, it is a severe indictment against Organized Medicine if it allows any individual or small group, having only theoretical and indirect knowledge of the actual problem, to withhold from the practicing physician knowledge of methods which may be personally displeasing to the withholders.

The steady progress of medicine has been accomplished through trial and error, and the "errors" (according to present-day conceptions) can be found in any antiquated issue of any medical journal. But these errors led to new trials by other hands and were the stepping-stones to further progress.

It appears that a scientific investigation and evaluation of the injection treatment of hernia has to be made along somewhat unusual lines. The common method of investigation, in large and well-equipped hospitals and under the supervision of experienced surgeons, is not acceptable because: (1) the patients who make up the clinical material in these hospitals are usually not cooperative to the extent required for this purpose; and (2), because, in the experience of most workers, the results of the injection treatment were bad at the beginning of their efforts but improved as they gained practical experience after a number of years, it would not seem fair to accept as competent, reports from hospitals or surgeons unless they are obtained in sufficient number and at the hands of workers who have spent considerable time in perfecting their technic in this special procedure.

As this may be difficult to accomplish, the best way to obtain valuable reports would be to investigate carefully and supervise the work of those men who have reported their results and who are willing to submit their work to strict scientific observations for a number of years. Selection of cases by a doctor, with the approval of the investigating committee; supervision of his method of treatment; comparison of the value of various solutions; and follow-up study over a period of years, with histo-pathologic examinations of tissue reactions,* should produce valuable results. This is the only way, in my opinion, to attain the scientific evaluation of the injection treatment of hernia, to which I think it is entitled.

*Since this article was written I discovered that some very valuable pathologic and comparative tests were made by A. F. Bratrud, F. S. McKinney, and E. F. Bell at the University of Minnesota (see *Minnesota Medicine*, 16:446, 1933).

Successful Hormone Treatment of the Menopause*

By Abner I. Weisman, M.D., New York City

AT the menopausal age of the woman, the ovaries, thyroid, pituitary and adrenal glands directly control the symptoms of that period. Although the physiologic interrelationship of these glands at the climacteric is not definitely known, the physiology of the ovaries during the "change of life" period is well understood[1, 2]. The symptoms of the menopause and the cessation of the menses are apparently due, primarily, to the gradual decline of ovarian function. This is evidenced by the sudden onset of the characteristic manifestations within a very short time after an x-ray or surgical castration[3].

This paper does not undertake to go into the various clinical manifestations of the climacteric, nor does it attempt to theorize concerning the multitudinous vasomotor and other phenomena. Moreover, I do not feel it necessary to expound the value of the estrogenic hormone in treating such cases, since Sevringhaus[4], Novak[5], Werner[6], and many others, have long since demonstrated its beneficial effect in the treatment of the menopause. However, I believe that we have now arrived at a much more satisfactory and convenient method than that formerly in use, for giving relief to the patient suffering with the menopause syndrome.

A series of 30 selected menopause cases was chosen from our clinic, special pains being taken to have each case conform to the following strict requirements: (1) No patient suffering with mild symptoms of the menopause was included in the study; (2) in each case the manifestations were so marked and continuous as to become distressing to the patient; (3) each patient was suffering with symptoms of only short duration (first treated less than two months after the onset of the complaints); (4) neurotic and hysterical patients were eliminated from the series by a preliminary two-week period of testing, using injections of physiologic saline solution and the oral administration of inert pills, as a placebo. In this manner those "feeling better" after the two-week test were excluded from the series.

Fifteen (15) patients, ranging in age from

*From the Female Endocrine Clinic affiliated with the department of gynecology and obstetrics, of the Metropolitan Hospital, New York.

23 to 47 years, suffering from artificial surgical menopause, and 15 patients, ranging from 39 to 50 years of age, suffering with symptoms of the physiologic menopause, were treated with the estrogenic hormone.

TABLE I

PHYSIOLOGIC MENOPAUSE (15 CASES)

Effect on Symptoms	1 week	2 weeks	3 weeks	4 weeks
Complete relief	0	7	9	11
Moderate relief	8	8	6	4
Slight relief	4	0	0	0
No relief	3	0	0	0

TABLE II

SURGICAL MENOPAUSE (15 CASES)

Effect on Symptoms	1 week	2 weeks	3 weeks	4 weeks
Complete relief	0	5	8	9
Moderate relief	9	6	4	3
Slight relief	4	3	2	2
No relief	2	1	1	1

The hormone substances used in our series were Progynon tablets and Progynon-B, commercial forms of the estrogenic hormone.* Progynon tablets do not contain tri-hydroxy-estrin in the pure form, but consist of a highly purified extract; and Progynon-B injection material is the benzoic acid ester of the dihydro derivative of keto-hydroxy-estrin[7].

After having studied the clinical effects of both substances for a period of almost two years, upon a large number of routine menopausal and endocrine cases at the clinic[8], I arrived at the conclusion that 500 rat units of Progynon-B, injected twice weekly, with the addition of three tablets of oral Progynon daily (each tablet contains 45 rat units), was most successful in ameliorating the distressing symptoms of the menopausal change. This procedure was employed in treating the 30 selected cases.

At the end of each week, over a period of four weeks, the results of the administration of the semi-weekly injections and the daily oral tablets were tabulated (see Tables I and II). After only one week of treatment, approximately four-fifths of all the patients felt somewhat relieved.

At the end of four weeks, 11 of the 15 patients treated for physiologic menopause were completely relieved of symptoms, while the remaining 4 patients were moderately relieved and suffered none of the distressing symptoms of which they had originally complained.

At the end of four weeks, 9 of the 15 patients treated for artificial surgical menopause were completely relieved; 3 were moderately relieved; and 3 were relieved very little or not at all. These remaining 3 patients were given injections of 2,000 rat units twice weekly, instead of the smaller dose, for a period of two weeks, after which all three were much relieved of their complaints.

Discussion

In arriving at the present method of administration of estrin in menopause cases, I am convinced that, while the daily injection of smaller doses, as suggested by Sevringhaus, Novak, Hamblen[9] and Dodds[10], has been successful in varying degrees in my hands, yet the inconvenience and expense of frequent daily injections, both in clinic and private practice, when compared with these excellent results, seem superfluous.

The difficulty with oral hormone therapy, unaided by injections, is that only about 20 percent of the total amount ingested is absorbed, and until a larger oral dose is obtainable commercially, it will be necessary to complement the oral treatment with injections, in order to get results.

The treatment of the menopause, combining both the semi-weekly injections of sufficiently high doses of estrogenic substance and the daily administration of orally-active estrogenic tablets, has been found to be a rational, convenient and successful form of therapy.

I am grateful to Drs. Paul Reifer, Charles C. Yerbury and Walter F. Schmidt, without whose kind assistance and advice this work could not have been completed.

Bibliography

1.—Zondek, B.: Vasomotorische Storungen im Klimakterium. *Ztschr. f. Geburtsh. u. Gynak.*, 82:559, 1920.

2.—Maranon, G.: "The Climacteric (The Critical Age)." St. Louis: C. V. Mosby, 1929.

3.—Engelbach, W.: "Endocrine Medicine." Vol. III, p. 735. Baltimore, Maryland: Charles C. Thomas. 1932.

4.—Sevringhaus, E. L.: The Relief of Menopause Symptoms by Estrogenic Preparations. *J. A. M. A.*, 104:624, Feb. 23, 1935.

5.—Novak, E.: The Therapeutic Use of Estrogenic Substances. *J. A. M. A.*, 104:1815, 1935.

6.—Werner, A. A., Johns, G. A., Hoctor, E. F., Ault, C. C., Kohler, L. H., Weis, M. W.: Involutional Melancholia. *J. A. M. A.*, 103:13, 1934.

7.—Schwenk, Erwin: Personal communication from Research Division of Schering Corp., Bloomfield, N. J. May 13, 1935.

8.—Weisman, A. I.: Efficacy of the Oral Use of the Ovarian Follicular Hormone. In volume of Collected Papers of the New York Homeopathic Medical College and Flower Hospital. 248:1, 1935.

9.—Hamblen, E. C.: Clinical Experience with Follicular and Hypophyseal Hormones. *Endocrinology*, 15:184, 1931.

10.—Dodds, E. C.: The Clinical Importance of the Sex Hormones. *A. J. Obst. and Gyn.*, 22:520, 1931.

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PHYSICAL THERAPY AND RADIOLOGY

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Physical Therapy in Office Practice

By William H. Guillium, M.D., Asbury Park, N. J.

THE employment of physical agencies in the practice of medicine has now become a routine procedure. Cases are being referred to competent medical men for physical therapy in greater numbers and earlier in the progress of disease than in the past. This is of vast importance, as suffering is lessened and ultimate relief is hastened. Physical therapy is not a panacea, but should be accepted as an aid to routine medical and surgical practice. It is specific in comparatively few conditions, but as an adjunct in combating disease and in rehabilitation it cannot intelligently be dispensed with.

In considering the possibilities of physical therapy as practised in the office, early treatment in the course of disease is implied. The advantages of this form of therapy are: (1) Ease of application; (2) prompt relief or palliation; (3) adaptability to other forms of therapy; (4) wide applicability to medical and surgical diseases.

The successful application of physical therapy cannot be properly carried out without apparatus of sufficient variety and capacity. One must have several agents to provide adequate selection, with proper complementary ones for synergistic action. In this way only can one expect to practice this branch of therapeutics to a logical conclusion.

Many physicians, unfamiliar with the agents used for physical therapy, have the idea that when this term is used, an "electrical apparatus" of some type is referred to. Under this general term, the following physical measures are included, and all are employed in this branch of medicine.

1.—Electrotherapy.
   a. Galvanic.
   b. Faradic.
   c. Sinusoidal.
   d. Static.
   e. Diathermy.

2.—Phototherapy.
   a. Light and heat.
   b. Infrared radiations.
   c. Ultraviolet rays (air- and water-cooled apparatus).

3.—Hydrotherapy.
   a. Whirlpool bath.
   b. Tub bath.
   c. Sitz bath.
   d. Contrast bath.
   e. Showers (needle douche, etc.).

4.—Mechanotherapy.
   a. Massage.
   b. Vibration.
   c. Corrective exercises.

The cases I am about to present are selected types adapted to office practice. Some were treated before, others following, and some both before and after hospitalization. It will be seen that by an earnest effort to afford the patients the benefits to be derived from physical therapy, routine measures have been avoided, each individual being treated according to indications, sometimes without but often with other standard methods.

Case Reports

Mr. T. W.; age 45; occupation, private overseer; referred to me by Dr. D. V. Manahan, Red Bank, N. J.

History: On October 15, 1930, while at work repairing his car, he bent forward to pick up a battery and strained his back. He was unable to work for one month, being strapped and wearing a belt. After returning to work he continued to wear the belt, but pain was present and was worse when lifting anything heavy. On Sept. 15, 1931, he again picked

up a battery and the bottom fell; as he made an attempt to catch it, he again had a sudden return of the low back pain and was disabled for one week. He had various treatments, including osteopathic, which he claimed did not help him. X-Ray pictures were taken of the dorsal and lumbar spine, anteriorly, posteriorly and laterally, which showed, "a slight lipping of the third and fourth lumbar vertebrae; no other evidence of bone or joint pathosis was noted." Dr. Manahan gave the patient some injections for his rheumatic arthritis, previous to his seeing me.

On June 6, 1933, examination revealed a well nourished male; weight 176 pounds; tall and lanky; tonsils cryptic and infected; teeth fair; painful back, both to motion and pressure; able to bend forward only to within 24 inches from the ground; lateral motion nil; could not pick up any weight or stand erect without severe pain; assumed a stooping position.

Diagnosis: low back sprain involving the lumbar and sacro-lumbar ligaments.

Treatment: Diathermy to the lower lumbar vertebrae and sacrum, through and through, together with infrared irradiation, three times weekly. After two weeks, static wave with static sparks was given following diathermy and heating. When unable to use static due to moisture, sinusoidal treatment was given, placing a pad over the abdomen and one over the painful area. This treatment so pleased the patient and apparently relieved him that static treatments were not resumed. Postural and relaxing exercises and manipulation were given as part of his routine treatment. Since the middle of August treatments have been given twice weekly. During the past two weeks the patient has been doing his regular work with no distress whatever, excepting slight discomfort during wet weather.

I feel this patient should have his tonsils removed to thoroughly complete his case.

The following case was treated in the office with the technic of Dr. Wm. Martin, of Atlantic City, N.J.

Mrs. F. H., age 58, had a right-sided hemiplegia in 1928, which confined her to bed during the three winter months. She applied to me in the fall of 1930—the first intimation I had of her attack—she having been a patient of mine earlier, for other conditions.

At the time she came to me she could walk with the aid of a cane, the right foot dragging, but with fair use of the right arm and hand. At this time her blood pressures were 156/100. There was considerable pain in both leg and arm. She had previously suffered from sciatica. Testing the nerve areas I found considerable pain under moderate current.

Treatment consisted of the static wave current over the usual areas, for the sciatic condition (20 minutes), and the same over the brachial area. Following this I gave her cerebral galvanization (20 minutes); the whole treatment three times weekly.

The technic of the galvanization was as follows: The indifferent pad, at the nape of the neck, attached to the positive pole; the negative consisted of an inch of thickness of folded gauze, wet with saline solution, placed over the forehead, over which was a metal electrode cut to fit. The current was turned on slowly, taking five minutes to reach the maximum of 8 to 10 milliamperes, and then continued for 10 minutes, with a final five minutes to reduce to zero. This treatment was continued until spring, then twice weekly until June, when she was discharged with full recovery. No one, at present, would know that she had had an apoplectic stroke, and up to this time she has remained well.

R. G., male, age 35. The patient, awakened after sleeping in front of an open window, was unable to close his right eye; tears were on his cheek and his speech was affected; his mouth felt peculiar. The mirror revealed the right side of his face drooping and expressionless.

He came to me two weeks after the attack, July 27, 1929. Examination revealed that all the muscles of the forehead, face and eye were involved (nuclear or infra-nuclear). Electrical reactions were not lost.

Diagnosis: Seventh nerve paralysis (Bell's Palsy).

Treatment: Infrared radiations for 15 minutes to the face, followed by high-frequency treatment for 10 minutes. Second treatment, preheating by photothermy for 15 minutes, followed by static wave for 15 minutes with the electrode fitted about the face and held in place by the patient. Following this a vacuum electrode was attached to the static positive pole and the patient directed to move it gradually over the affected parts. One treatment only of positive galvanic current to the motor points for ten minutes was given, following photothermy for 30 minutes, on July 31. Static treatments were then resumed, three daily treatments being given; then three on alternate days, followed by two more, making 8 in all. The last treatment was given Aug. 12.

Result: All muscles were restored. There has been no recurrence over a period of four years.

This case is particularly interesting, as the patient saw two physicians previous to seeing me, one giving him pills and requesting him to return in two weeks.

The following case was treated in the office with the technic of William B. Snow, M.D., New York City.

Mr. C. H., age 30, occupation, salesman, was referred to me by Dr. Donald Gordon, October 17, 1932.

History of having dislocated a cartilage on the inner side of the left knee, while leaping long steps. He was seen by Dr. Gordon and Dr. Watson at the hospital, where roentgenograms were taken and showed the displaced cartilage.

Treatment was directed toward removing the fluid in the joint and relieving inflammation in the cartilage. Diathermy was given for 45 minutes, followed by static wave treatment for 20 minutes, plus bandaging the knee,

plus elevation of the leg and rest at home between treatments.

After 7 treatments the fluid was gone completely, the leg was straight and the patient resumed work as a salesman. He received 13 more treatments, making 20 in all, was discharged Nov. 25, and is now symptom-free.

Miss G. M., age 21. *History:* She had intercourse about November 15, and stated that she took pills to bring on her menses. She had slight, dull pain in the ovarian region; temperature, 102° F.; was given 0.5 cc. of a vaccine. The pain cleared up, but returned later. On Dec. 24 she came to my office. *Examination:* Temperature, 98.2°; pains in the lower abdomen; positive urethral and suspicious cervical discharge; laboratory confirmed gonococcus infection.

Diathermy was given through the pelvis on December 24 and 27, and her pelvic pains disappeared. On Dec. 30 she was given positive galvanic ionization to the cervix for 20 minutes, using 12 milliamperes. Following this treatment she did not return.

A week later she appeared at my office and informed me that a "specialist" in New York told her she could treat herself and see him once weekly. I said, "Perhaps," and warned her of the dangers and of the nature of her abdominal pains. In less than a month she was sent to the hospital by another physician, and before leaving had both ovaries and tubes removed..

As a contrast to the history just recited, the following case was reported by me, with several others, at Boston, in 1928.

Mrs. E. R., in 1927, had acute gonorrhea, which developed into salpingitis. In my absence she was sent to the hospital, from which she was removed after the surgical opening of a Bartholin gland and desiccation of the lining membrane. She left the hospital on my advice (being my private patient), as I felt sure of the gonorrheal nature of her trouble. From June 12 to August 21, 1927, she received 20 pelvic treatments with diathermy and a few galvanic ionizations. There was some trouble with tenderness in the left vaginal fornix, which gradually cleared up. Since then she has enjoyed good health.

In the early part of 1932, this same patient wanted to become pregnant. Her husband was examined and found to be apparently normal. On May 23, 1932, I sent her to a gynecologist of excellent reputation, for the purpose of obtaining his advice regarding her sterility.

After a careful examination and a re-check, he diagnosed her condition as: (1) A large left ovarian cyst; (2) chronic endocervicitis. He advised operative measures and contended that this procedure would probably produce the desired effect, although this was not guaranteed. He based his diagnosis on "a large, fluctuating mass in the cul-de-sac, pushing the uterus to the right and anteriorly."

She was operated upon, and I was present. There were only a few adhesions, found in the lower left pelvic quadrant, and a left ovarian cyst about the size of an old-fashioned shoe button.

I felt, at the time of her first hospitalization, as I do today, that where the etiology is gonorrheal, or even where a mixed infection is suspected, if these cases are to be held a month or six weeks for "sterile pus," the time is too valuable to be lost, doing nothing. Many cases can be cleared up with the aid of physical therapy and without operative interference; although there may be an occasional case of mixed infection that may, perchance, develop complications. Where the patients are hospitalized, they are safe in any eventuality.

We have these gonorrheal cases in the office frequently, and where diathermy treatment is started without fear and given in large doses, the chances of checking them are too good to ignore. We must not forget adjunct treatment with non-specific protein therapy, etc.

The following case was treated, in the office, with the technic of Dr. Benjamin Ulanski, of Philadelphia.

Mr. A. D.; age 52; white; two years ago developed pain in his sacto-sciatic notch, which radiated down to the thigh and calf. He had been treated by various physicians, with no result.

Examination at Jefferson Hospital, surgical department, showed marked tenderness over the sciatic notch, radiating down the thigh and calf, and he complained of pain on the anterior and posterior surfaces of these structures. *Diagnosis:* Sciatic syndrome.

The patient was treated in the surgical department for some time, without results. His teeth and tonsils had been removed; gallbladder, prostate and appendix were negative; no etiologic factors were found. He was given ten treatments, with improvement from the first. He was able to return to work and there has been no return of symptoms during the three years that have elapsed.

Technic of the treatment employed: Two metal electrodes, the size depending upon the part to be treated, were covered with felt, gauze or cotton and well soaked in water. The electrodes were applied, the larger one above and the smaller one below the affected part, and were then connected to the sinusoidal terminals and the current turned on. The current was gradually increased until there was marked rigidity of the muscles involved. Treatment was then continued for ten minutes. This treatment is painful, but is effective where cooperation is secured.

C. W.; age 18; male; on September 9, 1932, came to my office with a history of a severe cough for the past two weeks. He was unable to sleep at night and kept the whole house awake with his incessant coughing. He complained of chilliness and general mallaise; soreness and heaviness in the chest; violent, productive cough, worse at night; tempera-

ture, 100.2° F.; moist râles, so profuse that nothing else could be heard. *Diagnosis:* Severe, acute bronchitis.

Cough sedatives seemed to have no effect and he refused to go to bed, for fear of losing his job in a bakery. Diathermy treatment was started the same day. He had 8 treatments of 30 to 60 minutes at 1800 milliamperes, through the chest, using large plates. On Sept. 26, the boy was well enough to stop treatments. He reported that after each treatment he slept through the night without coughing.

This boy had one of the most violent coughs I have ever heard, and it was amazing the way diathermy cleared it up. At the start of the treatment he usually coughed the plates out of position, but as the treatment progressed he quieted down. Cough sedatives were used in conjunction throughout his sickness.

Mrs. A. B.; age 40; reported for treatment June 12, 1932, with a history of abortion two weeks previously. She complained of a vaginal discharge and the passing of dark clots, with heaviness in the pelvis. *Vaginal examination* showed a subinvoluted uterus, tender to pressure. There was no fever.

Daily treatments with the static wave current were applied per rectum, with the electrode placed well against the posterior wall of the uterus. These were given for three days, for the decongesting effect. After these treatments the clots disappeared and the dark vaginal discharge was markedly diminished. Three subsequent treatments were given, and on July 10 the patient was discharged. No vaginal discharge was present and the uterus was firm and normal in size.

Miss H. T.; age 12; came to my office on February 10, 1932, with a severe head cold; temperature, 100.8° F. I treated her and sent her home, ordering her to bed. She did not like bed and was careless about staying there. On the night of Feb. 11, both ears became painful, the drums ruptured spontaneously and suppurated. On Feb. 12, the discharge ceased; temperature; 103.°; the mastoids were swollen, reddened and tender to touch; the tip of the mastoid was exquisitely tender; the child was restless and cried bitterly. *Diagnosis:* Threatened osteomyelitis of the mastoid, possibly requiring operation.

Treatment: Photothermy treatment was started immediately and the mother was advised to stay up all night and keep moving the lamp from one mastoid to the other. This she did, and kept the treatments up the following day and night. On Feb. 13 the temperature fell to 101.3° and the discharge reappeared. Photothermy was continued, two hours on and two hours off. Two vaccine injections were given, at intervals. On Feb. 15 her temperature was 99° and on the 17th it was normal. Following this the patient had several treatments at the office; on Feb. 27 the discharge had ceased; and since that time she has had no recurrence.

I have treated this type of case many times in the course of my practice. Some may have recovered without the photothermy, but it is certain that they were saved much suffering and time by these treatments. It is equally true that many would have been operated upon for mastoiditis, except for these treatments.

While the orthodox otolaryngologist waits days at a time, weighing the question, "Shall I, or shall I not, operate?" many general practitioners can very easily solve the question for him, by giving this harmless treatment in the interval while he waits, and curing the patient. I know of no other agent that so successfully controls this type of infection. The technic indicated must be persistently followed.

I close this paper feeling that, if the medical men reading this contribution will but try the treatment suggested in the prophylaxis of mastoiditis—that is, threatened mastoid osteomyelitis—they will find it no experiment. The saving of many disfiguring mastoid operations will alone make this effort worth while.

505 Fourth Ave.

NOTES AND ABSTRACTS

X-Ray Treatment of Sinusitis*

X-RAY therapy is a valuable adjunct in the treatment of chronic sinusitis. It is more effective in the hyperplastic type and allergic or borderline allergic cases with attendant nasal infection.

The chronic purulent types of many years' standing and the type having had many operations show variable responses, most of which are not entirely favorable, but there is an occasional case in this group which shows a spectacular result, with subjective improvement and alleviation of focal symptoms. I am not able to predict when this will or will not occur.

The treatment should be given by a competent roentgenologist. The dose used by Butler and Woolley was 120 K.V.P.; 5 M.A.; 10 inch distance; with a 4 mm. aluminum filter for 10 minutes per area, making about 900 small r. units. The dose used in this series has been variable, from 80 to 90 percent of a

*Laryngoscope, Nov., 1935.

skin erythema dose has been given. In some cases 150 K.V.P. has been given with 25 M.A., 3 mm. of aluminum filter for six minutes per area at 50 cm. distance. The principle involved is to get the rays into the tissue.

The machines should be calibrated by an ionization process or the Victoreen instrument, to know its individual output. A lead shield is made so the antrums are covered and the rest of the face uncovered. A dose, as above, is given through a correspondingly correct-size port, directing the rays up and back toward the sphenoid sinus; next, the ethmoids are treated on one side, the eye being covered, and the previously treated antrum and frontal covered. Next, the frontal is treated, directing the rays down and back. In this manner the sphenoid receives a dose from each treatment. Care must be exercised that there is no overlapping of irradiation. The tip of the nose should be covered at all times to prevent excessive dryness.

Patients are warned they may have the symptoms of an acute cold for a few hours or a few days. All do not experience this; however, a large mask may be used and the antrums, frontals, and the ethmoids of both sides treated through a large port for five minutes; then five minutes per area may be given in cases of a pansinusitis.

EDWIN D. WARREN, M.D.

Tacoma, Wash.

Ultraviolet Rays in Erysipelas

ULTRAVIOLET therapy is equal, if not superior to specific serum treatment of erysipelas, particularly about the face, and the cost is much less.

Patients receive an average of three exposures (given about 24 hours apart), to and slightly beyond the edges of the lesions, each involved area receiving an average of 57 erythema doses, or about 19 erythema doses at each treatment.

Most patients show marked improvement within 24 hours of the first irradiation and, if the temperature remains down, no further ultraviolet treatment need by given; if it remains high or rises after an initial fall, more treatments are given until the desired results are obtained.

In addition to the ultraviolet irradiations, every patient is alkalinized and kept at rest in bed during the febrile period.—DRS. H. J. LAVENDER and L. GOLDMAN, in *J. A. M. A.*, Aug. 10, 1935.

Ultraviolet Rays in Vincent's Stomatitis

TREATMENT of Vincent's stomatitis with ultraviolet rays should be continued until lesions are healed and normal physical conditions reestablished. How long this will take depends, of course, on the severity of the case, complications, and the patient's response to treatment. The effects of disturbed metabolism are not overcome in a day, yet it is often gratifying to see how quickly nature responds to intelligent treatment.

Experience seems to teach that a fractional body treatment every other day, giving a first-degree erythema dose, is sufficient as a start. After the first few treatments they can be spaced a day further apart, and still later reduced to one a week. In severe cases I find it advisable to give a series of treatments (ten or twelve), two to three days apart, and then once a week for some time. At no time should the dose exceed a first-degree erythema. Tanning of the skin dictates a change to some other part of the body.

The local treatment of mouth lesions with the rays, applied through a speculum or quartz applicator, may advantageously be repeated as often as necessary to stimulate the tissues and for other effects. Resistance and degree of local erythema will largely govern. As soon as the disease is under control, as evidenced by the change of the lesions, etc., undue erythema should be avoided, while smaller, tonic doses are beneficial.

It would seem needless to add that, coupled with ultraviolet rays, or any other form of treatment, attention should be paid to a suitable diet, proper elimination, etc. Of utmost importance to insure permanency of cure is the highly technical operation of curettage; elimination of pockets about the teeth; poorly constructed or finished dental restorations; care of various cavities, etc.

All that has been said with reference to the value of ultraviolet ray therapy in the treatment of stomatitis can be said with equal emphasis concerning Vincent's angina of the throat.

While I would not be understood as advocating ultraviolet ray therapy as a panacea for Vincent's stomatitis, it has proved, in my own and other hands, a valuable method of treatment.

A. T. RASMUSSEN, D.D.S., F.A.S.S.

La Crosse, Wis.

*Archiv. Phys. Ther., X-Ray, Radium, Nov., 1934.

No one who is deeply interested in a large variety of subjects can remain unhappy. The real pessimist is a person who has lost interest.—WILLIAM LYON PHELPS.

PROCTOLOGY

ASSOCIATE EDITOR

WILLIAM A. HINCKLE, M.D., Peoria, Ill.

Surgical Anatomy of the Anal Canal*

MILLIGAN and Morgan, assistant surgeons to St. Mark's, in a very comprehensive and practical article, emphasize that poor results in operating for fistula may be due to not finding the internal opening, but often are due to timidity on the part of the surgeon, who, through inadequate knowledge of the anatomy of the part, does not know how much of the sphincter can be cut without loss of control.

The anorectal ring is the sole custodian of continence. As its name implies, this ring is situated at the junction of the anal canal and the rectum. It is a composite fibromuscular band, composed of the upper portion of: (1) the internal sphincter, which is not a separate muscle, but the thickened portion of the circular muscle of the rectum; (2) the longitudinal muscle of the anal canal, which is the terminal fibers of the longitudinal muscles of the rectum; (3) the puborectal portion of the levator ani muscle; and (4) the deep part of the external sphincter.

The external sphincter is a trilaminar muscle. Named from below upward, its three parts are the subcutaneous, the superficial and the deep. The last two are not always separate and distinct. The first and third portions are anular muscles and are not attached to the coccyx. The second portion is eliptical and is attached to the coccyx. Fibromuscular septums, prolongations of the longitudinal muscles of the rectum, separate these divisions of the external sphincter.

As the examining finger enters the anal canal, the subcutaneous fibers of the external sphincter are distinctly palpated just within the verge. They constitute a round or eliptical band, about ¼ inch in thickness, entirely encircling the anus. This is the only part of the external sphincter that can be palpated in the male.

Just above this portion of the muscle the examining finger recognizes a groove about ⅛ to ¼ inch wide—the intramuscular septum, known also as Hilton's white line. Just above this line can be felt the rounded border of the internal sphincter. The superficial and deep parts of the external sphincter cannot be palpated with the finger in the rectum, as they encircle the intervening internal sphincter. In the female these deeper parts of the external sphincter can be felt through the posterior vaginal wall.

Only the deeper portion of the external sphincter, together with the internal sphincter and the puborectal portion of the levator ani, which go to make up the rectal ring, are essential to bowel control. The subcutaneous part can be cut, at any time and any place, without danger.

Fortunately most fistulous tracts are either subtegumental, or, following the sheath of the longitudinal fibers of the anal canal, pass between the subcutaneous and deeper portions of the external sphincter muscle, but do not involve the anorectal ring. In such fistulas, incision of the muscle involved may be done with impunity. Even in deeper types of fistulas, all the fibers of the anorectal ring are seldom involved.

The fibers of the anorectal ring are less numerous and more superficial in the anterior part of the canal than in the posterior part, where they are reinforced by the puborectal fibers of the levator. Hence the need for greater discrimination and caution in dealing with anterior fistulas. Fortunately for their successful surgical treatment, high-level fistulous openings in the anal canal are usually situated in the posterior portion, where the ring is broader and situated deeper.

For the confident and successful surgical treatment of fistula-in-ano, one must be practiced and skilled in palpating and recognizing the anorectal ring, for whereas, if the ring is cut, loss of control will surely result, yet as long as the narrowest complete ring of muscle remains, control is preserved. All the anal muscles below the ring may be divided, in any manner, without harmful loss of control.

With this conception of the structure and function of the anal canal treatment of

*_The Lancet_ (Lond.), Nov. 24 and Dec. 1, 1934.

fistulas becomes comparatively easy, at least theoretically. An anorectal fistula is the contracted cavity of an abscess which has been inadequately treated and has consequently failed to heal completely. Fistulous tracts are composed of hard fibrous tissue, the lumen of which is filled with granulation tissue, which gives rise to the discharge of pus and blood. The fibrous tract can usually be palpated through the skin and followed in the ischiorectal fossa and around the anus to the internal opening. Tuberculous fistulas usually differ from the simple inflammatory type by the absence of this indurated fibrous tract. Palpation and probing are usually sufficient to locate the direction and extent of all tracts.

The internal opening of a fistula can usually be located by light palpation with the finger in the anal canal. It appears as an indurated, irregular, obvious ulcer, or sometimes as a hard, fibrous dimple or projection. A probe passed up through the tract will confirm the findings. Careful palpation should also disclose the relations of the internal opening and the main tract to the anorectal ring. Such information is necessary for safe surgical treatment.

Regardless of the type of fistula, the principle of treatment is the same. The tract is incised, so as to leave an open, flat wound that will heal by granulation. The after-treatment consists in prevention of bridging, pocketing, overhanging skin and sinus formation. Healing takes place in its own way and time, regardless of the lotions, ointments, antiseptics, stimulants or caustics usually applied.

All fistulas in which the tracts enter the anal canal below the anorectal ring, even though the subcutaneous or even the superficial fibers of the external sphincter are involved, should be incised and the edges trimmed well back, to make a flat wound. If properly done, one need have no fear of incontinence.

In those fistulas with a tract or sinus extending above the anorectal ring, whether the tract opens into the rectum or not, the same principle of a wide-open incision applies, but the application is necessarily different. Anatomic considerations prevent the conversion of such deep tracts in the ischiorectal fossa into flat wounds. One must be content with guttering the tract posteriorly. If necessary, such an incision may be carried backward to the level of the coccyx. With a guiding finger in the rectum, this may be done with no danger of injuring the anorectal ring or other important structures.

To retard reformation of sinuses by rapid skin healing, the whole of the unimportant skin floor of the ischiorectal fossa is removed, leaving a wide, funnel-shaped wound from the floor to the roof of the fossa. Later, when the depths of the wound fill with granulation tissue, bringing its level to below the anorectal ring, the sphincter muscles below the ring can safely be cut. If there is an inner opening into the rectum, it can safely be disregarded. It will probably heal as the incision in the ischiorectal fossa heals.

W. A. H.

The Gruskin Test in Large Bowel Cancer*

CARCINOMA of the large bowel, especially the rectum and colon, is diagnosed readily if the characteristic pathosis is apparent. The lesion, as situated, presents a moderate or latent stage, ofttimes unamenable to treatment. The advanced cases, frequently seen in clinic and private practice, suggest the imperativeness of early diagnosis.

Many factors inhibit early recognition of malignant disease of the lower bowel. Change in bowel habit or bleeding from the rectum should prompt a sufferer to consult a physician immediately. It becomes mandatory that the physician make a thorough examination of the anus, rectum and sigmoid. Cursorily viewed, a malignant condition of the anus or rectum could be labeled piles. Subsequently these patients return with cancer manifest. With an indurated mass, fixation or an excavating ulcer, diagnosis is readily accomplished by digital and proctosigmoidoscopic investigation and confirmed by biopsy. Following a bariumized enema, irregularity of contour will usually be revealed by the Roentgen rays.

The Gruskin test is a valuable diagnostic means in those cases in which no apparent pathosis exists. These cases may present suggestive symptoms; yet biopsies continue negative.

Because of the fact that the malignant cells are embryonic in character and remain so, and their protein is different from that of the normal cell, a precipitation is produced when an alcoholic extract of embryonic cells is added to serums, and pseudopod formation occurs when a saline extract of embryonic cells is injected intradermally in a positive case. In view of the fact that these malignant cells are embryonic in character, antigens have been prepared from pure embryonic cells, using the epithelial tissues from the pancreas or liver of embryo calves for the carcinoma antigen, and the stellate connective tissue cells of Wharton's jelly for the sarcoma antigen. The test is performed by the intra-

Med. World, March, 1935.

dermal injection of 0.1 cc. of the antigen into the arm of the patient. A slight area of inflammation, with pseudopod formation, occurs in positive cases in 10 to 15 minutes. We have observed a delayed reaction 20 minutes after performance of the test. A control test with physiologic saline solution should be used.

There are certain cases, however, in which the test is questionable; namely, in patients who are emaciated and dehydrated; those with high fever or jaundice; immediately after operation; or following heavy doses of radium or x-rays.

It has been stated that the Gruskin intradermal test for malignancy is not practical because special training is required for its use and interpretations. Using a proved antigen for the test, there is no greater difficulty than that of giving an intradermal injection and carefully observing the produced wheal. The time of reaction is from 5 to 10 minutes. In advanced cases the reaction may appear after 15 minutes. If the skin of the patient's inner arm is flabby, select the shoulder where the flesh is more firm. In dehydrated cases, local applications of warm saline are comfortable.

The usefulness of the Gruskin test is its application in the detection of incipient malignant neoplasms. A positive Gruskin reaction should be a sign to the physician for careful examination and continued observation. After radical operation the Gruskin test may show a negative reaction for an extended time, but where recurrence or metastasis occurs the test has given a positive reaction before the regrowth could be detected.

HARRY E. BACON, B.S., M.D., F.A.C.S.,
and FRANK H. MURRAY, M.D.
Philadelphia, Pa.

Complications after Operation For Rectal Fistula*

RAINEY says over 50 percent of the patients suffering from a rectal fistula, who appear at the office of a proctologist, state that they have been operated upon one or more times and are still seeking relief. In nearly every case one operation should have sufficed had it been done correctly. Recurrence of the fistula, loss of sphincter control and subsequent tuberculosis following an operation for rectal fistula has placed this operative procedure in a bad light in the minds of the laity.

The greatest cause of recurrences from an unsuccessful operation for the cure of rectal fistula is the incomplete operation. The operator, in many cases, apparently has no conception of the formation of a rectal fistula or where to look for the internal opening. There is a well-known tendency for the fistulous tract to extend directly from the external opening to the rectal mucosa and then partially circle the circumference of the anus, to appear at the posterior commissure. The internal opening almost invariably occurs at the mucocutaneous juncture. It is only in those rare instances where foreign bodies have perforated the wall of the rectum that the internal opening is found higher than the mucocutaneous line. In the anterior half of the anal circumference the tract is more likely to lead straight into the rectum, and little difficulty is experienced in passing a probe directly into the rectum. It is to be remembered, however, that an external opening may appear high up on the perineum and still develop from an opening in the posterior commissure.

Rectal incontinence is by far the most dreaded complication of all postoperative catastrophies. In the male, irrespective of any particular point that a fistula may present in the entire circumference of the anus, the possibility of incontinence following a properly performed operation is negligible.

In contradistinction to the ease with which the sphincter ani may be cut across in the male, the surgeon must ever remember that, in dealing with the sphincter ani in the female, exactly the opposite of this is true and that only in the simplest cases should these operations be regarded lightly. The hazard of incontinence in the female proportionately multiplies as the fistulous opening tends to form toward the center of the vagina anteriorly. Fortunately, fistulas involving more than the mucous membrane rarely occur in the center of the vagina; but at the angles of the vagina the fistulous opening is frequently found. Whenever the sphincter is cut across at this point the possibility of incontinence is high.

With a rectal fistula so situated, the surgeon should select a two-stage operation, whereby the possibility of rectal incontinence is completely obliterated. When the patient presents herself for examination and the external opening is close to the vaginal outlet, a differential diagnosis has to be made between a possible rectal fistula and a chronically inflamed Bartholinian gland.

W. A. H.

*Missouri St. Med. Assn. J., Aug., 1935.

IMPROVEMENT

See that you do something better than you have been doing it; and next week or next year, do it better still, if it is only putting your foot to the ground.—ERNEST WOOD.

A LIVING FOR THE DOCTOR

(The BUSINESS of Medicine)

●

Team Work in Medicine

By Burton Haseltine, M.D., F.A.C.S., Chicago

THE economic readjustment which the profession of medicine is now of necessity undergoing is receiving so much anxious consideration that other perhaps equally necessary readjustments are, to some extent, neglected. One of these is the readjustment of the inter-relationship of the various specialties in medicine. This problem is closely related and, indeed, may be considered as part of the economic problem. It is not new, of course, since it must have arisen with the beginning of specialism in medical practice. In the older days it was comparatively simple. In most instances the patient was treated by a single physician, who only occasionally had need for the help of experts in any special field. Even consultations were usually conferences between men doing approximately the same kind of work. Under modern conditions this is all radically changed. Today the patient applying for relief of any serious ailment rightly expects that he will be given a diagnostic study requiring the services of perhaps several technical experts, and, if these services are rendered in an incoherent or poorly coordinated manner, he rightly has doubts as to their efficiency. The group clinic is, of course, one way of dealing with this changed situation, but there is need that it receive more attention from the entire profession, including medical teachers. Even in most organized clinics the technic dealing with economic and commercial factors is more highly perfected than that having to do with the correlating and synchronizing of the clinical work. Outside of such clinics the subject receives only haphazard attention.

The field of otolaryngology is a particularly good one in which to study the evolution of what we may call team work in clinical medicine. The specialty is still so young that men still living may be said to have seen its beginning, and yet so old as to be fully established as one of the major departments of practice. In its beginning it was little more than the elaboration of the mechanics of surgical procedure in certain fields. So crude were these at first that it was possible for almost anyone entering the specialty to make some real improvements in technic. Naturally this attractive field absorbed most of the best talent for a considerable time. Following this came a shifting of interest to the research field and we had important additions to our knowledge of special physiology, histology and pathology. Lastly has come a recognition, still incomplete, that the otolaryngologist thinks too exclusively in terms of *special* physiology, histology and pathology. He both teaches and practices in too great detachment from the field of general medicine. There is need for clearer recognition of the fact that, clinically, there is practically no such thing as an exclusively rhinologic case.

Function of Specialists

Granting this, how can the specialist best equip himself adequately to meet the problems presented in the practice of otolaryngology? The old idea that he can do this by a few preliminary years in general practice is, of course, fallacious. The attempt to do it by the use of extensive laboratory facilities is hardly better. His research work, like his clinical practice, tends to become too highly specialized and too divorced from general physiology and pathology. Under modern conditions it is, of course, impossible for one to attain expertness in several departments of medicine or surgery, and yet the clinician in practice is at all times confronted with cases requiring expertness in many lines for their successful management.

The situation is not adequately met by any system of medical training as at present organized. It could be met, I think, with the material and the facilities already existing, but only with a rather radical revision of our present concept of postgraduate instruction. For the development of expertness in the technics of the various specialties, perhaps no improvement is needed. But there is need for the development of a new kind of expertness—one so rare as to be as yet unnamed—and that is *expertness in the use of other experts.* This is a highly essential quality in the modern practice of medicine and one receiving too little attention in medical train-

ing. It can be acquired only by both didactic and clinical instruction. It can be brought about only by a slight rearrangement of courses, so that postgraduate students in training for all departments of special work are brought into closer cooperative relationship. This can begin in the didactic work and be carried out more fully in the clinical field. It can be so organized that every patient, into whatever department he may be originally admitted, is studied jointly by as many departments as may be required to cover his case completely. This will better serve the interest of both patient and student than for one physician to attempt to make the complete study.

Naturally one of the clinicians must act as general supervisor of each case, to correlate the findings and outline the program of treatment, and this would perhaps most often be the department of original admission, unless conditions of predominating importance in other fields were found. When the various examinations and laboratory reports are completed there should, wherever possible, be a conference of all the clinicians involved, with a discussion and comparison of findings and joint decision as to remedial procedures. This conferential relationship should continue throughout the entire management of the case. By participating in such conferences the student will obtain an understanding of the relationship of his specialty to the broad field of medicine which he can obtain in no other way. Instead of making crude attempts himself to do work in other fields, he will see it done by experts and discuss with them its relation to his own department. If he be a rhinological student he will soon learn that, as I have said before, practically speaking, there is no such thing as an exclusively rhinologic patient.

The practice of rhinology can be adequately carried on only in cooperation with the internist, the pediatrician and, not infrequently, with other specialists. Indeed there exists here a certain mutuality, for the internist or the pediatrician would be sadly crippled were he compelled to dispense with the help given him by experts in the field of rhinology and otology. So close is the relationship that it is doubtful if any diagnostic study can be called complete that does not include at least an inspection by one skilled in otorhinologic examination.

Such clinical conferences should of course include full discussion of all laboratory findings, and many times the laboratory worker should be included in the conference. The fetish-like dependence upon reports of laboratory technicians who have no knowledge of clinical histories and conditions, is the cause of much stupidity in medical practice. Because of this trend, both the technician and the diagnostician are looking too intently and too constantly at the written record and too little at the living patient.

This conception of cooperative practice is coming to be held by a large number of workers and is receiving some consideration by medical associations. The officers of medical societies, who are having trouble to provide suitable programs, should give this topic more consideration. On this point I can speak from a rather extensive personal experience. From many participations in a joint program covering the various phases of one problem in clinical medicine, I have been increasingly impressed with the interest shown by medical audiences in such presentations. There seems to be general recognition of the fact that this is an efficient way in which to study and to discuss such problems. There is no lack of appreciation of the brilliant workers who are conquering new territory, but there is growing interest in the work of consolidating and coordinating our gains, and to this every practitioner can contribute something.

This conception for the continuous cooperation of associated experts in the treatment of individual patients is by no means an untried theory. It is being applied with varying degrees of completeness in many medical groups. Naturally the need for it varies widely with the different problems presented in the highly diversified field of clinical medicine. Probably the most perfect illustration of this need and the most striking instance of the successful application of these principles is furnished by the clinical problem of bronchial asthma.

The Asthma Problem

The regrettable failure of both clinicians and researchers, working along conventional lines, to meet the asthma problem is notorious, and the reason for this failure is now fairly clear. It is because most of the work has been done by isolated technical experts, each studying some special phase or theory, without any conception of the real nature of the asthma problem in its entirety.

With the impulsion of the brilliant success crowning the search for the causes of such diseases as tuberculosis, syphilis and diphtheria, a mountain of effort has been expended in searching for *the* cause of asthma, with only mouse-like results. With a correct understanding of the nature of asthma, it is obvious that no other result is possible in a search for the cause of asthma, because there is no such thing as *the* cause of asthma. But the highly complex combination of etiologic factors present in every asthma patient, with properly organized efforts can be successfully studied and, in most cases, successfully treated.

With these facts so indisputably established and so widely being applied, there is an element of pathos in the number of sincere workers who are still so frequently reporting a "series of cases" subjected to some recommended procedure, in the hope that it may prove to be "the" cure for asthma. If any investigator, before running such a "series of cases," would study the work of Adam, in Glasgow, Cameron, in London, Myers, Phillips, Watters, Gibson, or our own group, in America, he would be spared much waste of effort. The success of all these and many others who are obtaining such outstanding results in asthma is due to highly skillful and closely integrated team work, done by a group of associated specialists, all working with a correct understanding of the essential nature of asthma.

Cooperation of this type will not merely improve the average of results in clinical medicine, but will contribute materially toward the solution of the economic problem with which we are confronted. The economic demoralization of the medical profession is due mainly to the entire lack of unanimity, either of thought or action, upon the part of its various components. In no other department of human activity do we see so universally and so shockingly the practice of what in commercial life is called "chiseling." Not only are doctors competing fiercely for lucrative business, but they are even fighting each other for the privilege of working for nothing. Private doctors compete with each other to get State jobs, and when the State job is landed by one he starts competing with the private doctor and the income of both suffers in consequence. The university competes with its own graduates in underbidding for paying patients, thereby cutting down the income of some of the very people who are contributing to its support. In the whole field of medicine there is a waste from duplication and misdirected effort that is economically ruinous, all of which would be avoided if this energy could be converted into cooperative activity. But this can hardly be accomplished until some sort of instruction in team work becomes part of the regular training of medical men.

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NOTES AND ABSTRACTS

Physical Therapy and Medical Economics

WITH "State Medicine" firmly entrenched in certain countries and with this form of vicious class or restricted legislation becoming more and more apparent at home, the medical profession should endeavor dispassionately to discuss the *raison d'être* of this political supervision so inimical to medical individualism and to the best health interests of all concerned.

It is needless to review here the various reasons for and against "State Medicine"; they are familiar to all of us. Despite the controversial nature of the subject, there is one negative and one positive fact definitely apparent: that the people in general are not receiving the utmost health benefit scientifically procurable from the medical profession; and that acute and emergency conditions affecting health, unlike chronic disability, usually command the best of medical skill and attention.

It has been stated, upon apparently reliable authority, that 10 percent of any given community enjoy good health; 3 percent are always sick; while 87 percent are neither perfectly well nor perfectly sick. In other words, a large majority of the population is chronically disabled to some extent. It is this chronically imperfect proportion of the community which so strenuously directs attention to the *apparent* imperfections of medical science, as at present available. We emphasize this word apparent, because timely and expertly administered physical therapy, with its wealth of remedial and alleviative agencies, can obviate, or at least minimize, much otherwise chronic disease and, subsequently applied even in apparently intractable conditions, prove that nothing is impossible.

We have been accused, in times past, of possessing an inferiority complex, because we then stated that physical therapy was not popular with the profession, and that its members needed much and practical physical therapy education.

When a recognized school of physical therapy teaches that diathermy is of great value in the treatment of pneumonia, and an equally recognized textbook of physical therapy intimates that Christian Science would be equally efficacious; when a reviewer states: "That short-wave therapy has actually proved superior to diathermy, is now the conviction of many authoritative investigators," and only a few weeks previously, in an issue of the re-

viewer's journal, a physical therapy authority writes: "There are, to date, very little clinical data to show that short-wave therapy has any great advantage over ordinary diathermy"; when a large majority of physical therapy departments rarely, if ever, utilize a galvanic and sinusoidal apparatus; when electro-diagnosis is seldom thought of in determining neuro-muscular disability in state labor compensation cases; when the statistics of chronic disability reflect the ever increasing discontent of the "masses" in their inability to secure adequate physical therapy attention, prior and subsequent to the stage of chronicity; then we again reiterate that physical therapy is still impeded by a disastrous inferiority complex, so far as being accorded any comprehensive recognition of its essentialness in a scientific and practical concept of medical economics is concerned.

J. E. G. W.

The New Deal in Therapy

AT a cost of $125,000 to the taxpayers, a house-to-house canvass is to be made in Chicago to discover the relationship of illness and unemployment. A member of the medical faculty of Johns Hopkins has been sent out here to run the show. When it is all over we shall know that some people are sick because they are unemployed and others are unemployed because they are sick. A few of the shrewder heads in the community had suspected some such relationship, but it will be nice to have the suspicions confirmed, with neat tables of figures.

Once upon a time there was a Balkan general who, being a general of long experience, was fighting his battle from a farmhouse ten miles back of the lines. A colonel of the staff came dashing up to the farmhouse, his horse foam-flecked. The colonel was a very learned man indeed, having studied at the general staff colleges in Germany and France and having read many books on the art of war.

"Excellency," cried the colonel (after saluting, of course), "Excellency, the enemy is surrounded. We have made a most careful check and it is our considered opinion that we have no less than 23,755 of them in the bag."

The general did not show the expected delight.

"Don't count 'em," he shouted hoarsely. "Don't count 'em; kill 'em!"

The naive old general had assumed that the art of war was the art of disposing of the enemy. Naive laymen have been assuming for a long time that the art of medicine is the art of healing the sick. Obviously they were wrong. "Don't cure 'em; count 'em," is the New Deal's latest contribution to the relief of pain and disease among the unemployed. Apparently it is better to spend $125,000 to count a hundred thousand sick people than to cure 5,000 of them.

Perhaps these remarks are unjust. Maybe, after a sick man has been counted and carefully questioned as to his middle initial and when he first began to have headaches, he will feel a lot better. Maybe.—EDITORIAL in *Chicago Tribune*, Oct. 22, 1935.

The Use and Importance of Laboratory Studies

I GOT into conflict with a health officer, on one occasion, over the fact that a female food handler had been diagnosed, from external examination, as having "clinical gonorrhea." I maintained that there is no such entity as "clinical gonorrhea"—that the condition was gonorrhea or it wasn't and only microscopic examination would decide. That is the useful purpose of laboratories.

But are we allowing the laboratories to make our diagnoses for us? and is the public cognizant of this?

An amusing fact, as evidence of the general ignorance on such matters, occurred recently. A young couple had sexual intercourse for the first time, and the following morning went to a laboratory for an Aschheim-Zondek test for pregnancy.

In the past year I have seen patients four and five months pregnant, with repeated negative Aschheim-Zondek tests, and they were astounded to hear that they were actually pregnant, as they considered that the test was infallible.

The Wassermann reaction should be used only as a confirmatory measure. The diagnosis of syphilis should have been made before asking for this test. A negative Wassermann reaction, alone, means nothing, either as regards diagnosis or cure.

A physician should be able to do his own laboratory work, such as urinalysis, microscopic examination of smears for gonococci, tubercle bacilli, Vincent's spirilla, etc.

Abraham Jacobi, whom I met over thirty years ago, used to say that, if a doctor doesn't know how to use a microscope, the patient should go to another who does.

R. S. MACARTHUR, M.D.

Los Angeles, Cal.

THE SEMINAR

"A MONTHLY POSTGRADUATE COURSE"

(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Ill.)

Problem No. 1—1936 (Medical)

Presented by Dr. Edmund Lissack, Concordia, Missouri

(See Clin. Med. & Surg., Jan., 1935, p. 48)

RECAPITULATION: Miss G., a spinster of 45 years, has been constipated since girlhood, and now also complains of "rheumatism," affecting the knees especially, with contractures which keep her from getting about. She has had fever to about 100° F., intermittently, for several weeks. No significant family or personal history.

Roentgenograms show hypertrophic changes about the knee joint; besides that, the only abnormal objective findings are: slight edema of the ankles; septic tonsils; a trace of albumin in the urine; moderate secondary anemia; a few moist râles at the bases of both lungs; a cell count of three and colloidal gold reaction 1112200000 in the spinal fluid; free hydrochloric acid rather low (13) and a positive benzidine test for blood, in the stomach contents; a positive agglutination test for *Bacillus abortus;* and roentgenologic evidences of hypertrophic changes in the knee joints.

Requirement: Suggest diagnosis and, especially, treatment, *in detail.*

Discussion by Dr. J. S. Lankford, San Antonio, Tex.

Dr. Lissack has gone deeply into this case and given the patient the benefit of a most extensive and exhaustive examination. It is unusual to have a case covered so thoroughly from every standpoint. Certainly a chronic rheumatic sufferer deserves the best.

Is there any further point to make in the diagnostic study? The low specific gravity and the trace of albumin suggest the advisability of the phenolsulphonephthalein kidney efficiency test, to see whether there is any kidney retention. The metabolism test might be thought of, but is probably inadvisable on account of the state of the lungs. The main thing is the condition of the tonsils. They are reported septic and yet there is no history of tonsillectomy. Focal infection from the tonsils might explain a good deal of the suffering. If the patient has been operated upon, it should be expected that there would be months of rheumatic suffering, once it has begun, before the blood has time to be corrected.

The present condition might be explained as follows: Lifelong obstinate constipation, burdening the detoxicating function of the liver, finally led to toxicosis from intestinal sources. Then the kidneys were put upon a strain to keep the poisons out of the blood, but failed to do so. The tonsils were affected in a secondary way and ultimately became the chief source of reinfection and rheumatism. It often happens that this particular form of constipation is of thyroid origin, and this condition finally involves the whole endocrine system more or less.

The treatment being used by Dr. Lissack is good, but owing to the fact that the gastrointestinal tract, especially the colon, is probably the original source of autoinfection, a rather prolonged course of vaccine, which should include colon bacilli, such as Van Cott's formula, marketed by various manufacturing companies, might well be tried.

The edema of the ankles (and probably of the lungs, in a limited way) would seem to be, not from cardiac weakness or nephritis, but due to the blood state—excess of certain acids. Acid in the tissues attracts water from the blood. There is a general tendency toward edema. A short course of some good alkaline preparation might be good practice.

To improve the state of the intestinal tract and to correct the blood by stimulating all the endocrine functions, why not give ¼-grain thyroid tablets, just as we give it in myxedema, which is characterized by a widespread edematous condition? Small doses of iodide, over long periods, might do good.

Of course she should have a tonsillectomy if that has not been done, careful guarding against such sequelae as bronchial or pul-

monary complications, and some continuous medication to restore the blood to normal.

Discussion by Dr. G. M. Russell, Billings, Mont.

I wish to compliment Dr. Lissack upon his very complete examination. It is a pleasure to observe such a report. If every medical man would give each patient coming to him such a thorough overhauling, the cults would have less to do.

The only points in the history and examination which are suggestive, so far as etiology is concerned, are the constipation and the septic tonsils.

So far as diagnosis is concerned, there is but one, and that is *arthritis*, which is just as useful a term when the underlying etiology and pathology are unknown as is rheumatism.

As for treatment, enucleation of tonsils and thorough cleansing of the colon by a series of enemas of magnesium sulphate, 2 ounces to 2 quarts of hot water, given in the knee-chest position, and oil retention enemas. I have seen chronic lumbago, of seven years' standing, clear up on just that treatment. Intravenous or intramuscular injections of colloidal sulphur have recently been recommended for this condition (*J. A. M. A.* 105:23, 1934). Until we discover the definite etiology and pathology, treatment of these secondary conditions must remain emperic.

Discussion by Dr. Oswald C. J. Withrow, Toronto, Canada

The diagnosis of the present condition is *subacute arthritis*.

The treatment depends, of course, upon the cause, and I make bold to say that we must look, in this case, for some source of autointoxication.

Six things in the statement of the problem strike me as important.

1.—The family history is without significance.

2.—The tonsils are septic.

3.—She has always been constipated.

4.—She feels blue and depressed *much of the time* and worries easily. I will hazard the guess that that symptom is very much off-and-on, appearing in spells, as it were. This often occurs in a condition of autointoxication.

5.—There is backache along the entire length of the spine.

6.—The negatives of the gastro-intestinal tract show no abnormalities. May I suggest that negatives do not usually show the true picture of what is happening. The physician should carefully watch the stool screenings over a period of some days, as well as study the films.

The treatment ought to begin with the enucleation of the septic tonsils. An autogenous vaccine can be made from the exudate found in these and administered over a period of some weeks. A mixture of sodium bicarbonate and sodium salicylate may be used with advantage, and some form of electricity applied to the affected parts—probably shortwave.

If this treatment does not effect a cure, or at any rate result in great relief, I suggest that, from the history, there may be a chronic appendicitis requiring operation.

Closing Report by Dr. Lissack

The following report of treatment and progress will bring the history of Miss M. F. G. up to date.

Medication: From Jan. 26 to Mar. 27, 1935, solution of iron arsenite and manganese (ampules, Parke, Davis & Co.), 1 cc., intramuscularly, every other day; Jan. 26, 1935, to date Hymosa (Walker), a teaspoonful 4 times a day; Jan. 26, 1935, to Jan. 8, 1936, Haliver Oil with Viosterol 250D (Abbott), 4 capsules a day; Jan. 8, 1936, to date, Super D Concentrate perles (Upjohn), 2 a day.

Orthopedic Treatment: From Jan. 26 to Feb. 20, 1935, Buck's extension was applied to both legs, for the purpose of straightening the knees and preventing flexion contraction. From Feb. 20 to April 3, 1935, she sat up in a chair at intervals, doing simple flexion and extension exercises (at first passive and later active) for the hips and knees. During the next four or five months she propelled herself about the house with an ordinary chair equipped with rollers. Then I encouraged her to stand and walk, and this she is now doing. She goes up and down stairs and is about all day without difficulty.

She has resolutely refused to have her tonsils removed.

Diet: I believe that the diet I prescribed, especially the high vitamin content supplemented by the medication, was a definite factor in her improvement, so I give it in some detail:

Breakfast:
Fresh fruit—average helping,
Orange or grapefruit juice—1 glass,
Eggs—2,
Bacon—3 slices,
Rye bread toast—1 slice,
Butter—2 squares,
Coffee with 40-percent cream.

Dinner:
Clear soup or broth,
Meat or fish—average serving,
Vegetables—average serving,
Fruit or vegetable salad with mayonnaise,
Milk or buttermilk—1 glass,
Rye bread—1 slice,
Butter—2 squares,
Fruit dessert.

Supper:
Tomato juice—6 ounces,
Liver, chicken or lamb chop—average serving,
Vegetable, cooked—average serving,
Fresh vegetable, as lettuce, tomatoes, celery, etc.,
Rye bread—1 slice,
Milk or buttermilk—1 glass,
Fruit dessert.

This patient now has a very slight flexion contracture, but it causes her no trouble. She has been taking daily walks out of doors, even in subzero weather, and feels well.

Problem No. 3—(Surgical)

Presented by Dr. Fred D. La Rochelle, Springfield, Mass.

THE patient, a man, age 27, was admitted to the hospital at 7:30 P. M., Sept. 30, 1933, and after the routine clinical examination the diagnosis of acute appendicitis appeared very probable. The only discordant fact was that a good-sized mass could be felt in the right iliac fossa. Since the symptoms were urgent an operation was advised, and this was done at 9:00 P. M.

On delivering the appendix, which hung free in the abdomen, with the exception of a few adhesions, it became evident that it did not account for the symptoms and signs. The incision was enlarged and further exploration disclosed a mass the size of an orange within the cecum. There was some doubt at the time about the nature of this lesion. The probabilities were: (1) Neoplasm; (2) tuberculosis; (3) inflammatory mass.

The cecum was not adherent to the neighboring structures and the cecum and ascending colon could have been removed with the mass without much difficulty, but this appeared to be a rather serious procedure to carry out without careful planning and preparation. Consequently, the appendix was excised in the usual manner and the wound closed, with a drain down to what it was hoped would prove to be an inflammatory mass.

There was nothing special about the convalescence and the patient was discharged on October 18, 1933, with the wound healed, with the exception of a small fistula at the site of the drain. He returned for dressings and for a time it appeared that the wound would heal completely, but instead of doing this it began to discharge fecal matter. This was assumed to be an ordinary fistula from a breaking down of the mass, and it was expected that healing would eventually take place. This did not occur. The fistula drained continuously, with the exception of short periods when it would close and the abdominal wall became painful and the patient sick. The symptoms always disappeared with renewed drainage, which in most instances took place spontaneously.

Bacteriologic examinations were made of the discharge and repeated x-ray pictures were taken, without throwing much light on the problem.

The condition became so distressing that the patient was compelled to give up his work and, in addition, became very despondent—and not without cause! Often after meals he would drain large quantities of liquid ileal contents, making it necessary to wear a large pad, and even that would sometimes soak through. With the exception of the periods when drainage would stop, his general health was fairly good. He visited many physicians but always returned to me, which I admit I secretly hoped he might not do.

Of the multiplicity of opinions there was no end. No two physicians advised the same course of procedure and none seemed very eager to inherit the case.

On September 29, 1934, he developed an abscess of the abdominal wall in the hypogastric region. This was opened and the old fistulous tract was explored with a proble. The abscess healed but the fistula continued to drain.

All this man talked about was his drainage and anyone who has ever seen such a case can well imagine how interesting that was to his physician and his friends.

In July, 1935, he returned to me once more and told me something would have to be done as he could stand it no longer. His only alternative was to jump in the river, which he threatened to do.

Requirement: What would you have done for this patient, and why?

CHANGING THE CONSTITUTION

If, in the opinion of the people, the distribution or modification of the constitutional powers be in any particular wrong, let it be corrected by an amendment in the way in which the Constitution designates. But let there be no change by usurpation; for though this, in one instance, may be the instrument of good, it is the customary weapon by which free governments are destroyed.—GEORGE WASHINGTON.

CLINICAL NOTES and ABSTRACTS

Aortic Aneurysm

(A Case Report)

A. M., age 39, married, a Negro male laborer. *Present Complaint:* At the time he was first seen, Dec. 3, 1935, he had a sensation of "heaviness" in the right chest, with a "drawing down sensation," and pain, radiating to the right arm and up the neck on the right side, worse at night. Vertigo, dyspnea, and shortness of breath on slight exertion had also been present for "several months."

Past History: Scarlet fever; "colds;" "flu" in 1933; a "hernia operation." The patient had been self-treated, over a period of years, for "asthma."

Essential Physical Findings: A systolic murmur in the aortic area, with accentuated aortic second sound; marked visible pulsation in the third interspace on the right, about 1.5 cm. from the right border of the sternum. Blood Pressure: right arm, 118/70; left arm, 110/70. Blood Kahn test, 2 plus; Wassermann test, anticomplementary.

Examination of the Chest: Fluoroscopic and roentgen-ray findings: "There is some increased fibrosis in the lung fields. The cardiac shadow is most unusual. The cardio-thoracic ratio is 15 to 29 cm. In the upper mediastinum there is a marked bulging into the right lung, which extends about 9 cm. from the midline and is about 10 cm. in a perpendicular measurement and is definitely connected with the aorta and heart. There is some increase of the size of the heart. Oblique films show that this mass bulges anteriorly and to the right.

"*Conclusion:* There is a large aneurysm on the ascending portion of the arch of the aorta, involving most of it."

This individual admitted having had a primary lesion in 1914, for which he was given 3 or 4 "bottles of medicine," which "cleared the condition up." Pathetically, he has gone along, blissfully ignorant of anything more serious than "asthma" and "gas on the stomach."

WILLIAM T. GUENO, M. D.

Quincy, Ill.

[The question of the therapy of aortic aneurysm (which is, of course, almost always syphilitic) is highly pertinent.

Realizing that a patient with this disease may die suddenly at any moment, whether he is being treated or not, the wise physician will always be decidedly careful not to be too strenuous and bold with his treatment, because if the patient dies (as he might have done in any case), there may always be those who will attribute his demise to the vigorous treatment he was receiving.

There are authorities who state that arsenicals should always be considered and generally used in the treatment of syphilitic aortic incompetence and aneurysm, but the consensus seems to be that the physician in charge of such cases should be cautious in the use of these drugs, and should rely mainly on bismuth or mercury and the iodides.

However, there are a number of men who have had wide experience along this line who suggest a regime something like this: The patient to be kept strictly quiet in bed for a number of days or weeks, under treatment with bismuth or mercury and iodides, until he is free or practically free from pain and in as good a condition as is practicable, and then carefully and judiciously given one or more courses of intramuscular injections of Bismarsen, which many seem to consider the best and safest arsenical for use in cases of this sort. It has also been recommended that potassium iodide should be given intravenously, as well as by mouth.

In all of these cases, rest and a quiet and regular life are exceedingly important, especially that the patient should abstain from coitus, which has, in a good many cases, resulted in sudden death.—ED.]

Hypothyroidism

HYPOTHYROIDISM seems rarely to be a disease entity, but certainly a common symptom. It is, rather, one of the fragments that make up the temporary or permanent pattern of the functional entity of the individual. As a fragment in a pattern it may have important relationships, most notably with the other endocrine glands. Presumably variations from the usual standard of the individual are more significant than variations

from an arbitrary standard. In this respect there is some similarity to variations in blood pressure and especially to our interpretation of hypotension. All the theoretical, experimental and clinical data indicate that, while hypothyroidism is only a symptom, it is, nevertheless, a symptom which should be and can be frequently satisfactorily treated.—ROGER I. LEE, M.D., F.A.C.P., in *Ann. Int. Med.*, Dec., 1935.

The Viscerogalvanic Reaction

THE differential diagnosis of visceral diseases is often aided by a study of the associated referred pain of the hyperalgetic zones of the skin and the tender areas of the muscles. Such a study, however, fails in many cases because the subjective complaints of the patients may be unreliable. It is desirable in such cases to localize pain by objective methods. A more delicate objective method for the demonstration of referred pain in cases of visceral disease seems, therefore, to be desirable.

In such cases the segments of the spinal cord corresponding to the organ involved are in a state of hyperexcitation. This hyperexcitation involves both the somatic and the vegetative segmental centers, as shown by the hyperalgetic zones and the visceromotor reflexes. Consequently, increased nerve impulses are carried, not only along the motor nerves, but also along centrifugal vegetative nerves to different vegetative organs, e.g., in the skin. Excitation of the vegetative centers induces an increase of the electric potentials of the skin, as shown in psychic excitation, viz., by emotion (Tarchanoff's phenomenon), or in artificial stimulation of the various parts of the central nervous system. It seemed, therefore, probable that the increased excitation of the segmental centers associated with referred pain becomes manifest by an increase of the electric potentials in the corresponding dermatomes. Such a reaction was indeed found and was called viscerogalvanic reaction in a preliminary report made by us.

Thirty-two (32) patients with abdominal or thoracic pain were examined, and 15 without visceral disease were used as controls. Among the first group there were 8 patients with angina pectoris, 10 with gastric or duodenal ulcer, 1 with spastic colitis, 1 with chronic appendicitis, 4 with subacute cholecystitis, 7 with nephrolithiasis and 1 with pulmonary tuberculosis.

The measurements of the galvanic potentials of the skin show considerable differences in different areas of the body, even in a normal person, as already pointed out by Munk and Flockenhaus and by Keller, in their studies of these potentials in conditions other than those investigated by us. Munk mentioned, rightly, that even in normal persons the values are sometimes irregular around the nipple and high around the umbilicus. In cases of such irregularities it is advisable to make the measurements in more lateral parts of the body, e. g., in the anterior axillary line.

It was found that different potentials may be led off from two areas that have the same temperature, e.g., the chest and the abdomen. This shows that the viscerogalvanic reaction does not depend on viscerovasomotor reflexes. Reflex contraction of the arrectores pili can also be excluded as a possible cause of the increased potentials, as the visceropilomotor reflex appears much more rarely than the viscerogalvanic reaction; if the patient is examined, for instance in a warm room, the visceropilomotor reactions fail to appear despite a well-developed viscerogalvanic reaction.

The electrical potentials of the skin, as measured by the compensation method, are often increased in areas which correspond to diseased visceral organs (viscerogalvanic reaction). This method can be employed as an objective means to demonstrate areas of referred pain.

DRS. E. A. SPIEGEL AND M. G. WOHL
Philadelphia, Pa.

*Arch. Int. Med., August, 1935.

Disease Syndromes Electrically Determined*

SOME years ago, when called upon to give a definition of health, I said that health was the equilibrium of vital forces. This definition, although exact, was nevertheless incomplete as I had not, at that time, the least idea of what constituted these vital forces. Today, however, biology has made wonderful progress, since the discovery of the cellular elements.

It seems to be well demonstrated today that these vital forces originate in the cell itself, and are caused by a phenomenon similar to one taking place in a wet battery—elaborating a galvanic current caused by the decomposition of the chemical substances introduced in the organism through alimentation, respiration and medication. Scientists have, for a long time, looked for a means to measure these vital forces.

Mr. F. C. Ellis, an electrical engineer of Chicago, sought other methods and, since human electricity is of a galvanic nature, he endeavored to measure it with a galvanometer of extreme sensitivity, of the mirror type, and succeeded, with this instrument, in registering deflections of a moving shadow caused

*L'Action Médicale, Dec., 1935.

by electricity from the body. But the quantity of human electricity or energy so detected was so small that he set aside the normal unit of measurement, the ampere, and established a new unit by taking as zero the starting point representing the quantity of galvanic current passing through a cadaver and adopted, as the normal, the galvanic current passing through human specimens taken amongst college boys enjoying the best of health.

Mr. Ellis then divided these two points in the microgalvanometer band into 50,000 scale divisions, each division representing, on the scale he uses, approximately 42 ten-billionths (.0000000042) ampere. He called this microgalvanometer, and its accessory circuit elements, the "Micro-Dynameter." This term, unlike the ambiguous appellations often attached to new devices, is accurately descriptive of his instrument, being formed of three common words: "micro," meaning small; "dynamical," pertaining to forces not in equilibrium; and "meter," to measure. This new instrument is, then, one for measuring small, dynamic electrical forces of the human body, or the balance between health and disease, which are not in equilibrium since they vary over wide limits with disease conditions.

To localize a lesion, the positive contact is made to the forehead, while the negative contact is fixed to a special electrode having a zinc surface of a diameter of about half an inch. This electrode is placed successively opposite every organ to be examined, and the deflection of the galvanometer will indicate the amount of cellular activity above the normal in this special organ.

It must be first understood that the instrument will not label the different diseases. It is a help in diagnosis, the same as is a thermometer or a sphygmomanometer. The physician is the only one to place an interpretation on the readings. The instrument does not replace the physician's brain. So there is nothing mysterious about the instrument, no more than a thermometer or a stethoscope, or any other instrument in daily use by physicians. But the services rendered by this instrument are much more important than those rendered by any other known instrument, as in localizing the foci of cellular activity, it permits the physician to complete his examination of these particular locations more intelligently by laboratory researches, by x-rays, etc.

It is well to note that only active or chronic lesions are registered on the micro-dynameter band. Scar tissues, having no cellular activity, will not affect the galvanometer.

The electrometric method embodied in the micro-dynameter may be valuably employed for the purpose of indicating the general health condition of the patient, measuring the condition of sub-oxidation and the accurate localization of lesions, the speed of the method making it a useful diagnostic adjunct.

L. D. Dorval, M.D., C.M.

Montreal, Can.

"Colds" and Influenza

SINCE, after years of study by the research workers, as yet no discoverable diffinity and specific etiology has been forthcoming, it would seem probable that the "common cold" and "influenza" are identical.

It would be hard for a doctor of years ago to diagnose a case of the smallpox of today, on account of its mildness, due to partial immunity built up from years of vaccination. Yet forty years ago almost any one of the laity could diagnose smallpox at first sight. The same holds good with diphtheria, scarlatina and a few other diseases.

It seems that as far back as the XII or XIII century there have been epidemics and pandemics of influenza; and it also seems that streptococci, staphylococci and pneumococci are always on the ground, and yet they are not sure of any strangers being there. So I wonder if, when these epidemics occur, there is not a strong virus that gives the pronounced symptoms in "influenza"; then, each year afterwards, the body becomes more and more immune until the influenza practically peters out and we thus have "colds" until such time as our systems lose their immunity, when another epidemic of influenza appears, just as probably would be the case should we discontinue vaccination in smallpox.

Perhaps, in looking for the "big black bear," the research workers have overlooked the "little black bears."

I would like to hear some comment on this subject.

Oliver B. Barron, M.D.

Ferndale, Calif.

Histidine in Gastro-Duodenal Ulcer*

IN a series of 73 patients showing clinical and roentgenologic evidences of gastric or duodenal ulcer, a 4-percent solution of histidine monohydrochloride was given intramuscularly, in alternate buttocks, daily, beginning with 5 cc. and increasing, in obstinate cases, to two to four times that dose. The number of injections varied from 10 to 60, depending on the nature and duration of the case. There were no local, focal or general reactions and this treatment appears to be free from danger.

After a six-months' check-up, 79 percent of

*Ill. M. J., Jan., 1936.

the cases showed definite clinical evidences of improvement, varying inversely with the duration of the symptoms, and 21 percent were considered failures. Roentgenologic evidence of healing was more pronounced in gastric than in duodenal ulcers. The treatment was especially effective in postoperative gastro-jejunal ulcers.

Pain, eructation and other distressing symptoms usually disappeared promptly, and the patients tolerated a liberal diet.

This method of treatment is simple, appears to be satisfactory, and can be carried out on ambulant patients.

DRS. I. F. VOLINI AND R. F. MCLAUGHLIN. Chicago, Ill.

Look for FACTS AND COMMENTS among the advertising pages at the back.

Acne Rosacea

ACNE rosacea appears to be due to an animal parasite, *Demodex folliculorum*, and responds promptly to specific treatment.

The face should be vigorously washed with soap and water, at night, and then rubbed briskly with the ointment about to be described. This will, at first, cause a mild irritation of the skin, but this condition passes off as the treatment proceeds. The ointment I suggest (with variations at times) is compounded in three parts, thus:

No. 1:	Beta-naphthol	gr. iii	0.2
	Rectified spirits	M iii	0.2
	Mix.		
No. 2:	Balsam of Peru	M xx	1.3
	Ol. olivi	M xx	1.3
	Mix.		
No. 3:	Sulphur Precip.	gr. v	0.3
	Ung. Aq. Rosae ad	℥i	31.0
	Mix.		

Mix Nos. 1 and 2 very thoroughly, and then add No. 3.

In treating acne rosacea, a *correct diagnosis* must be made, as this treatment is not suitable for eczema of the face, lupus erythematosus and certain other skin diseases.—DR. WM. J. MACDONALD, of Boston, in *Urol. & Cutan. Rev.*, Dec., 1935.

Pneumothorax in Pneumonia

PNEUMOTHORAX induction immediately relieves severe pleural pain. This may also be accomplished by other methods and occasionally by such a slight pneumothorax that it is not visible radiographically. This occurred ten times in a single year on the performance of routine lung suction for diagnosis among 400 patients.

Pneumothorax may be induced accidentally as the result of lung aspiration, without apparent change in the course of the disease. There is an ample margin of safety and, with a capacious chest, one lung may provide sufficient surface for gas exchange. The relief of pain may be followed by oppression and soreness in the chest.

Contralateral involvement may occur or be present and, in that case, the pneumothorax increases the anoxemia. Displacement of the mediastinum may occur and require relief. Pneumothorax has no effect on the immunity mechanism and does not prevent or cure bacteremia. The disease may not be shortened.

The symptoms of anoxemia are more frequent and more severe in some pneumonia patients with pneumothorax. The performance of pneumothorax does not absolve the physician from the responsibility of promptly determining the type of pneumococcus involved, and the use of available specific serums of proved value to prevent and cure bacteremia. Early use of serum in pneumonias due to pneumococcus Type I prevents empyema.

The pneumothorax treatment is not one for the home, and while being evaluated should only be employed, with x-ray guidance, by those accustomed to pneumothorax therapy and its hazards and by those familiar with the pneumonias and equipped to study their problems.—JESSE B. M. BULLOWA, M.D., in *N. Y. State Jour. of Med.*, Oct., 15, 1935.

The Leukopenic Index

THE leukopenic index is a diagnostic procedure which does not displace the usual diagnostic allergic methods, but is considered an adjunct of particular value in the intractable type of case.

It is suggested that a good proportion of socalled intractable or chronic cases of asthma, heretofore often regarded as based on infective or bacterial allergy, in reality result from a complexity of multiple food sensitizations. This sensitization to foods may be so inclusive as to involve all foods in some instances, but usually one can determine a sufficient number of foods which the patient may tolerate to maintain caloric and dietary requirements and remain free of symptoms.

In a series of counts, leukopenic index determinations appear to have about 21 percent more diagnostic value than a corresponding number of skin tests. There may be a definite leukopenia following ingestion of a food which does not produce clinical allergy. In a few instances leukocytosis followed ingestion of a food subsequently found to be a cause of symptoms. The various trial and elimination diets, while effective in some

instances, often include the very foods which produce symptoms and can, therefore, not be accepted as ruling out food factors in intractable asthma.—DR. MICHAEL ZELLER, in *Ill. M. J.*, Jan., 1936.

Reading for the Bedridden

READING is the most satisfying pastime for most bedridden patients, but those who have to lie flat on their backs for a longer or shorter period encounter rather serious difficulties. They must either hold the book in an uncomfortable and tiring position over and in front of the face, or infraduct the eyes so sharply that the ocular muscles are soon on a strain.

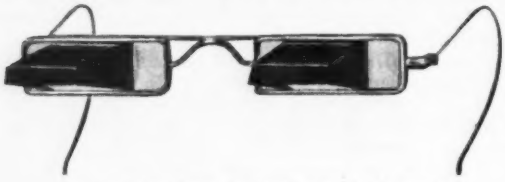


Fig. 1.—Prism Spectacles for Reading in the Supine Position.*

Fig. 2.—Patient Wearing the Spectacles.*

These difficulties are overcome by spectacles (see Fig. 1) containing prisms, so arranged that a patient, lying completely supine, can, when wearing them, hold his book in an easy and natural position on his chest and read with the eyes directed straight forward, as in Fig. 2. If his vision needs to be corrected with lenses, these can either be inserted in the frames of the prism spectacles, or these latter can easily be worn over the ordinary reading lenses.

Physicians who have bedridden patients will do well to look into this. G. B. L.

*Cuts by courtesy of Almer Coe & Co.

Vitamin C and Rheumatoid Arthritis

SUBACUTE or chronic vitamin C deficiency, in the guinea pig, produces an arthropathy with manifold similarities to rheumatoid (atrophic) arthritis. These include synovial proliferation, intra-articular pannus formation, periarticular fibrous tissue overgrowth, bone atrophy and subcutaneous nodules. In certain instances, superimposed infection accelerates and accentuates the pathologic process.

In our study, infection, in the presence of adequate vitamin C nutrition, failed to produce arthritis. Brief evidence has been presented that vitamin C deficiency may, by producing a locus of diminished resistance, also operate as a predisposing factor in the etiology of truly infectious (suppurative) types of arthritis. The general atrophic changes found in rheumatoid arthritis involving the bony skeleton, muscle and skin, are seen also in chronic vitamin C deficiency. Evidence indicating the probable clinical importance of latent scurvy, and the depleting effect of fatigue and certain infections on the organic stores of vitamin C, has been noted. Clinical data are cited that the nutritional habits are frequently imperfect preceding the onset and during the course of rheumatoid arthritis.

Experimental, epidemiologic and clinical evidences afford the basis for the concept, that vitamin C deficiency may operate as a factor in the etiology of some cases classified as rheumatoid arthritis.—JAMES F. RINEHART, M.D., San Francisco, Calif., in *Ann. Int. Med.*, Dec., 1935.

Hysteria Complicating Abdominal Trauma

FOLLOWING a sharp epigastric blow from the fist of a mischievous eight-year old boy at a country barn dance, a nineteen-year old girl was brought to me the same night with excruciating pain, uncontrolled by morphine and sedatives. Epigastric rigidity and tenderness, combined with continued agoniz-

ing pain the following morning, warranted exploration; so, regardless of a negative flat x-ray plate, I made a high left rectus incision and carefully explored the field. The only evident lesion was a small, subserosal clot, the size of a dime, in the gastrocolic ligament. This was picked up, ligated at the base, and resected. Uneventful recovery followed the usual closure.

Fearful of a high-grade hysteria with such mild presenting lesion, I recently checked the patient, to find her in perfect health, ten pounds heavier, and completely free of all her previous dysmenorrhea, indigestion phenomena, and nervous instability.

Surgery, in this case, undoubtedly served a double-purpose, and I would follow the same procedure again under similar circumstances.

RAY F. DONOVAN, M.D.

Watseka, Illinois.

Get all you pay for. Read and use the ads.

A Correction

IN the February, 1936, issue of CLIN. MED. AND SURG., on page 103, appeared a clinical note by Dr. F. R. Greenbaum, at the end of which he was given the title "M.D." This was an error, as his proper title is D.Sc. (Doctor of Science).—ED.

Procaine Packs in Fresh Wounds

SMALL, fresh, accidental wounds have been rendered anesthetic by the application of a Novocain (procaine) pack (1%) for 5 to 8 minutes, and with a 5-percent solution in 5 minutes.

Cleansing and suturing of such wounds were done without pain, thus ensuring better working conditions for the surgeon, better cosmetic results for the patient, and no pain for the latter.

The only contraindication is the freshly-bleeding wound, in which it can be used after hemorrhage has ceased or has been controlled by the topical application of 1:1,000 adrenalin (epinephrin) solution.

This method has the advantage of simplicity over the nitrous oxide method, and it obviates the danger of infection, the pain of preliminary cleansing and of the first needle prick, and the tissue-distortion of the infiltration method.

The area of effective anesthesia extends about 1 cm. beyond the wound edges.—DRS. MILO FRITZ and E. K. TANNER, in *N. Y. St. M. J.*, Dec. 1, 1935.

Motor Disorders of the Stomach

UP to now we have given more attention, in the study of the gastric functions, to the chemical than to the motor factors, which latter can now be studied more fully by modern methods.

We must consider the *tonicity* of the organ, which keeps its contractility in balance; the *motility* (intensity and rhythm), which refers to the peristalsis; and the *movability* resulting from the last-named, by which coordinated movements take place.

The dynamic functions of the normal stomach depend upon the condition of its musculature and the influence of the vagus-sympathetic system.

The most common disorders of the motor mechanism of the stomach are: *Pyloric insufficiency*, which permits the gastric contents to pass into the duodenum prematurely; *pyloric occlusion* due to spasm (generally reflex, from appendicitis, cholecystitis, or inflammation of other near-by organs, or due to endocrinopathy or vagotonia); *gastric hypo-* or *hyper-tonia;* and *gastric asystole*, which corresponds to a similar condition of the heart and results in epigastric pain, vomiting and various other symptoms.

All these conditions can and should be studied and diagnosed by means of the x-rays, gastrography and gastrotonometry.—DR. J. M. GONZÁLES GALVÁN, of Seville, Spain, in *Ars* MEDICA (Barcelona), Aug., 1935.

I have liked CLINICAL MEDICINE AND SURGERY for many years because it has the freshness of a college lecture.—DR. J. J. D., London, Eng.

Getting Rid of Ants

THE best and surest remedy for eliminating ants, which very frequently are found in kitchens, is a poisoned syrup, put out in perforated tin cans which admit the ants, but keep out pets and children. Pets, of course, should not be admitted to the kitchen.

The mixture can be made at home or prepared by a druggist. Dissolve one pound of sugar in a quart of water, adding 125 grains of arsenate of soda. Boil until dissolved. Add a little honey. Working ants eat this and carry it to the young ones in the nest.

If the ant nest can be found, inject a tablespoonful of carbon disulphide and cover the opening quickly with mud or a piece of sod.

In the control of ants it is of first importance to keep all food in covered containers. Cleanliness of the premises should be the watchword.—*Bul. Kentucky Dept. of Health.*

THUMBNAIL THERAPEUTICS

Pyuria in Infancy and Childhood

THE treatment of acute pyuria in infancy and childhood consists, first and foremost, in an attempt to wash out of the upper part of the urinary tract as much infected material as possible. The administration of large amounts of fluid and the bringing about of a urinary acidity sufficient to inhibit bacterial growth make an ideal combination during the acute stage, with which to wash out the passages and prevent further growth of organisms in them. In the more chronic cases, methenamine, used under controlled conditions, offers better chances of success than any of the other urinary antiseptics.—Dr. H. F. Helmholz, in *Jour. Lancet*, May 1, 1932.

Stimulant Drugs Useless for Well People

THE well known stimulants, such as strychnine, caffeine, cocaine, and epinephrin, which are of great value in certain disease conditions, do not produce the same effects in those who are normal. In fact, they may give rise to opposite results, reducing the physical efficiency. — *Science News Letter*, Feb. 1, 1936.

Protecting Babies' Eyes

IF the eyes of newborn infants are to be adequately protected, physicians must no longer put implicit trust in a single drop of silver nitrate solution, but must make a serious attempt to treat, before confinement, the mothers suffering from gonorrhea and other infections of the birth canal.—Dr. Louis Lehrfeld, in *J. A. M. A.*

Intermediate Operation for Appendicitis

THE most *dangerous* time to operate for appendicitis is between the third and ninth days. If the diagnosis is made during the *first two days* of the attack, operate at once; if later, carry out the "Ochsner management" (absolute rest of the digestive tract) until the tenth day, or later, before operating.—Dr. E. MacD. Stanton, in *Surg., Gyn. & Obst.*, Nov., 1934.

Postpartum Hemorrhage

THE best treatment for postpartum hemorrhage is the rectal injection of fluid extract of ergot, U.S.P. Given in this way, it acts speedily, does not cause nausea and vomiting and may be given at any time in the postpartum period. Pituitrin, in maximal doses, hypodermically, acts on the uterus in from 3 to 6 minutes. Morphine relaxes the uterus and should not be given postpartum.—Drs. J. L. Jones and O. W. Barlow, in *A. J. Obst. & Gynec.*, Apr., 1935.

Sugar As a Hemostatic

ONE of our best and safest hemostatics is sugar. Finely-powdered, sterilized sugar is placed in a powder blower and blown against the just-previously-dried bleeding surface. If the hemorrhage does not stop at once, use a pledget of cotton saturated with a strong sugar solution and pressed against the bleeding surface with forceps.—Dr. G. E. Jannulis, in *Monatschr. f. Ohrenh.*, Oct., 1934.

Blood Transfusion in Septicemia

BLOOD transfusion is a most valuable therapeutic measure in septicemia. It is best given intravenously early in the disease, every 48 hours, in adequate amounts, until clinical improvement is seen. Immunotransfusion gives best results.—Dr. Frederick Stenn, in *Ill. M. J.*, Jan., 1936.

Look for THE LEISURE HOUR among the advertising pages at the back.

Rossium in Drug Addictions

ROSSIUM was used in 40 cases of drug addiction, with 29 cures. This is a much higher percentage than with either of the methods formerly used at the Metropolitan Hospital. The method is simple, and the ease and mild degree of symptoms, while patients are undergoing treatment, is striking. There were no untoward effects noted, and no cases of idiosyncrasy in the group.—Drs. G. F. Raynor and H. E. Bauer, in *Med. Rec.*, Aug. 7, 1935.

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Medical & Dental Arts Bldg., Waukegan, Ill., is accompanied by a check for the published price of the book.

Books are the masters who instruct us without whip or rod.—DE BURY.

Gay *et al*: Etiology of Diseases

AGENTS OF DISEASE AND HOST RESISTANCE. Including the Principles of Immunology, Bacteriology, Mycology, Protozoology, Parasitology and Virus Diseases. *By Frederick P. Gay and Associates (Past or Present Members [With Four Exceptions] of the Department of Bacteriology, College of Physicians and Surgeons, Columbia University, New York). Springfield and Baltimore: Charles C. Thomas. 1935. Price, $10.00.*

When one undertakes a study of the causes of disease, one must search for material in widely separated places. Bacteriology by no means covers the entire field; pathology tends to be concerned more with the details of morbid tissue changes than with their causes; allergy would almost like to be a tight little kingdom all by itself; and so on.

This well balanced, modern survey for the first time covers comprehensively the comparative etiology of disease. While devoted primarily to the principles of immunology, bacteriology, mycology, protozoology, parasitology and virus diseases, sections deal extensively with the practical applications to infectious diseases of bacteriology and immunology, both diagnostic and therapeutic. It has little concern with laboratory technic.

Many debatable problems are discussed judiciously. International literature is presented fairly, and work done in this country is surveyed exhaustively. The bibliographies are extensive and accurate.

Combining happily the unity of a one-man treatise, and authoritative separate (but often heterogeneous) articles, it lies intermediate between a textbook and a series of monographs or a system. Written largely by specialists who have made original contributions to their respective fields, the work is a collaborative unit, such as could be written only from an extensive experience in a large department.

Here, in one massive and well made volume of nearly 1,600 pages, one can find all the important available information regarding the immensely various causes of disease and the body's mechanisms for combating them.

Well edited, conveniently arranged for sequence of text, and containing an informative index, the book is abundantly illustrated —many diagrams, tables, and illustrations being original and revealing contributions. A number of splendid color plates add definite value.

Clinicians, advanced research workers, teachers and students, will appreciate the vigor and vitality of this new and entirely different text and reference book, which, indeed, is not merely a single volume, but a compact library, and should be so thought of when considering the relatively very modest price at which it is offered.

Rehfuss and Nelson: Gallbladder Disease

THE MEDICAL TREATMENT OF GALLBLADDER DISEASE. *By Martin E. Rehfuss, M.D., Clinical Professor of Medicine at Jefferson Medical College, Philadelphia, and Guy M. Nelson, M.D., Instructor of Medicine at Jefferson Medical College, Philadelphia. Illustrated. Philadelphia and London: W. B. Saunders Company. 1935. Price, $5.50.*

The authors present the subject of gallbladder disease from the medical point of view. From experience they find that in this most common disease of the upper abdomen there is a large group of individuals with minor disturbances in the biliary tract, which in many cases are merely functional, for whom surgical treatment is not indicated. Moreover, there are many patients with more serious conditions who will not submit to surgery and for whom some definite plan of medical treatment must be adopted.

The authors believe that recent progress in our knowledge of gallbladder disease and the newer methods of diagnosis give greater confidence in approaching medical treatment. Many of their medically treated patients have been observed for more than ten years and they have no hesitancy in stating that three out of four patients who present themselves to the physician can be materially helped or even completely relieved by following certain details of treatment which they specify. Their book has been written with the thought of stimulating others to aid in helping many of the sufferers from chronic gallbladder trouble.

There are 24 chapters which cover the usual pathoses of the gallbladder, including particularly infections and gallstones. There is an excellent bibliography of the important literature. The book is well printed and contains such illustrations as are necessary.

The general practitioner will find this a good book, which sums up the present-day non-surgical management of gallbladder disease.

Brengle: Modern General Practice

MODERN OFFICE AND GENERAL PRACTICE. A Handbook of Practical Medicine. *By Deane R. Brengle, M.D., 1057 Highland Drive, Dearborn, Michigan. Kingsport, Tennessee: Southern Publishers, Inc. 1935. Price, $3.25.*

In this interesting and helpful volume, the reader will find the personal experiences and suggestions of an up-to-date clinician, set forth simply, directly and in full detail, so that any physician can follow them out. The material is arranged in encyclopedic form (alphabetically), and the only adverse criticism of it would be that the index might profitably be made a good deal more complete.

No attempt has been made at the production of an exhaustive textbook, but the busy doctor, searching for assistance in a hurry, will at once perceive distinct advantages in finding one reliable and successful method for the management of a disease condition explained with confidence by one who has tried it and is not afraid to state just what remedies he used.

There is scarcely a general practitioner who could not profitably keep this little book on his desk for daily reference; and he would probably be a better doctor by so doing.

Sensation: Its Mechanisms and Disturbances

SENSATION: ITS MECHANISMS AND DISTURBANCES. An Investigation of the Most Recent Advances. *With 153 Illustrations and 31 Tables. Baltimore: The Williams and Wilkins Company. 1935. Price, $7.50.*

This is volume XV of a series of research publications based on the proceedings of the Association for Research in Nervous and Mental Disease. There are thirty-three contributors of conspicuous ability and the whole covers an investigation of the most recent advances in the important field of the sensory nerves, including visceral sensations. A valuable volume for physicians dealing with nervous and mental disease.

Hayner: Regional Anatomy

REGIONAL ANATOMY. Adapted to Dissections. *By J. C. Hayner, B.S., M.D., Associate Professor of Anatomy, Assistant Surgeon, Flower Hospital; Assistant Visiting Surgeon, Metropolitan Hospital, New York, N. Y. Baltimore: William Wood & Company. 1935. Price, $6.00.*

Most anatomic texts contain a wealth of illustrations, but here is a volume on anatomy entirely without illustrations, yet of practical value to the surgeon who is planning an operation in an unfamiliar field and wishes to remind himself of the existence and position of all the important structures to be encountered. Primarily, however, it is a concise descriptive regional anatomy for students, adapted to dissection; a time-saver but by no means merely a compend; a companion to and not a substitute for the large standard textbooks such as those of Cunningham and Piersol. The arrangement of the various regions is determined in accordance with the dissection system generally used. The Basle anatomic nomenclature is used.

Edwards: Anatomy for Physical Education

ANATOMY FOR PHYSICAL EDUCATION: Descriptive and Applied. *By Linden F. Edwards, Ph. D., Assistant Professor of Anatomy, Ohio State University. With 472 Illustrations, 263 of which are in color; 657 pages. Philadelphia: P. Blakiston's Son & Co., Inc. 1934. Price, $7.00.*

Despite the multiplicity of textbooks of human anatomy, the author has "Found none of them adaptable to the needs of the student in physical-education anatomy."

The first part deals with general anatomy; the succeeding four parts cover regional anatomy, the bones, muscles, articulations, blood vessels and nerves of each region being considered in the order named. Brief descriptions of the respective surface and applied anatomy are given in each chapter, and a review of the diagnosis and treatment of the usual types of injuries due to athletics.

This is a thoroughly comprehensive Anatomy, so concisely arranged that the busy physician, nurse, technician, physical educationist and therapist can immediately and invariably find the exact anatomic information desired. The beautifully graphic illustrations; distinctive paragraphing; bold-faced typing of the anatomic structures described in the various sections; and unusually clear print, conduce to a form which is equally pleasing and instructive.

J. E. G. W.

Solomon: Prescription Writing

PRESCRIPTION WRITING AND FORMULARY. The Art of Prescribing. *By Charles Solomon, M.D., Assistant Clinical Professor of Medicine, Long Island College of Medicine; Associate Attending Physician and Chief of the Medical Clinic, Jewish Hospital of Brooklyn; Lecturer in Materia Medica, Nurses Training School, Jewish Hospital. 32 Illustrations. Philadelphia, London, Montreal: J. B. Lippincott Company. 1935. Price, $4.00.*

The prescription is still the mainstay of the average practitioner's armamentarium. There is perhaps, however, too much reliance on proprietary preparations, either because some physicians have not studied the action of drugs singly or in combinations or because they do not take sufficient time to find what

drugs are most suitable for a given case. Not only ought the physician to know what drug is indicated in a certain disease, and the actions and effects of that drug, but he must also know the best preparation of the drug to use in a given case, the best way of combining it with other drugs so as to increase its effectiveness and improve its palatability, as well as the optimum dose and other details concerning its administration. Dr. Solomon's book is admirably suited to furnish all this information. The first part contains the general facts of pharmacy; the second part is devoted to prescription writing; and the third and longest part is a formulary.

The main thing to remember and act upon in writing a prescription is that there can be no set or standard prescriptions. Although general formulas may form the basis, yet every individual medical case presents its own peculiar problems and suggests the use of particular drugs and particular modes of administration.

Practitioners will find here everything that it is necessary to know about prescription writing and about the common drugs.

International Clinics

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and Other Topics of Interest. *By Leading Members of the Medical Profession throughout the World. Edited by Louis Hamman, M.D., Visiting Physician, Johns Hopkins Hospital, Baltimore, Md. Volume IV, Forty-fifth Series. 1935. Philadelphia, Montreal, London: J. B. Lippincott Company. 1935. Price, $3.00.*

The December, 1935, number of the *International Clinics* contains several very interesting clinical contributions. In the Medical Section, Dr. J. H. Means opens with a paper on observation of the tongue and what it teaches, and correlates part of the clinical acumen of old-time practitioners with present-day scientific knowledge. Dr. P. H. Long writes a good paper on "Theoretical and Practical Considerations Concerning the Use of Bacterial Vaccines." There is a timely contribution by Doctors L. T. Gager and E. M. Ellison on generalized (therapeutic) argyria, which is important owing to the widened use of silver germicides and antiseptics. Dr. M. Gardberg gives an excellent review of the present status of the treatment of diabetes mellitus, giving emphasis to diet.

There are six contributions in the surgical section, the most important for the general practitioner being a paper by Dr. D. Hart on the "Treatment of Acute Empyema"; one by Dr. John J. Gilbride on "Hour-Glass Contraction of the Stomach"; and an excellent paper by Drs. C. F. Martin and H. E. Bacon on "Lymphogranuloma Inguinale", based on 136 cases. This condition is being more frequently observed than formerly and its ramifications are being extended, giving it a greater clinical importance.

These volumes are an important part of the equipment for graduate study of any progressive physician.

Crew: History of Physics

THE RISE OF MODERN PHYSICS. *By Henry Crew, Professor Emeritus of Physics, Northwestern University. Baltimore: Williams and Wilkins Co. 1935. Price, $4.00.*

The author of this very interesting history of the science of physics has presented an outline of its advancement, in such a manner as to give the reader a more complete and understandable concept of the science as a whole. Although emphasis has been placed on modern achievements and discoveries, a working background has been presented in the form of a resumé of the acquired knowledge and trend of thought before the advent of modern scientific advancement that has taken place during the past several centuries. Inasmuch as the subject matter deals for the most part only with that part of the science that has been proved and time-tested, the more recent discoveries of our present-day scholars have been omitted, as not being yet a definite part of the true history of the science, and also to avoid confusion.

In the review of the advancements made in the field of physics, the individuals and agencies who have made possible these advancements have not been ignored. Short biographies and descriptions of the work done by each of the most outstanding contributors to the science are presented in their proper place in the text.

Whether or not one is a student of physics, one should read this volume. For those not so well versed in the subject it will prove to be a source of digestible knowledge presented in such a manner as to give a fairly complete conception of the whole of the science. To the student, it will not only prove valuable as a reference work, but will act as a means of coordinating the total knowledge into a workable and understandable whole.

J. R. C.

Surgical Instruments

CATALOG OF SURGICAL INSTRUMENTS. *1935. Twenty-Fourth Edition. 21-09 Borden Avenue, Long Island City, New York: Kny-Scheerer Corporation. Available only through surgical instrument dealers.*

This large and well made volume of more than 500 pages, beautifully and substantially bound in art fabrikoid, describes and illustrates practically every surgical instrument which is generally accepted as a standard pattern, and will be a valuable reference book for hospitals, clinics and other institutions where surgery is done, and also for specialists in surgery and for librarians.

New Books Received

The following books have been received in this office and will be reviewed in our pages as rapidly as possible.

THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA. *Eleventh Decennial Revision (U.S.P. XI). Official from June 1, 1936. Easton, Pennsylvania: Mack Printing Company. 1935. Price, buckrum, $5.00; flexible leather, $6.00.*

THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE PERIPHERAL ARTERIES. *By Saul S. Samuels, A.M., M.D. New York: Oxford University Press. 1936. Price, $3.50.*

THE HAIR AND SCALP. A Clinical Study with a Chapter on Hirsuties. *By Agnes Savill, M.A. M.D. (Glasg.), M.R.C.P.I. Baltimore: William Wood & Company. 1935. Price, $5.00.*

POST MORTEMS AND MORBID ANATOMY. *By Theodore Shennan, M.D., F.R.C.S. (Edin.) 3rd Edition. Baltimore: William Wood & Company. 1935. Price, $9.00.*

A MANUAL OF THE COMMON CONTAGIOUS DISEASES. *By Philip Moen Stimson, A.B., M.D. 2nd Edition, Thoroughly Revised. Philadelphia: Lea & Febiger. 1936. Price, $4.00.*

MARRIED LIFE. A Family Handbook. *By Reinhold Willman, M.D. Chicago: J. S. Hyland & Company. 1935. Price, $2.75.*

PAINFUL AND DANGEROUS DISEASES OF THE EAR. A Text-Book for Students and General Practitioners. *By R. R. Woods, M.V., F.R.C.S.I. New York: Oxford University Press. 1936. Price, $5.25.*

DIE WECHSELBEZIEHUNGEN. *By Atmung and Kreislauf. Dresden and Leipzig: Verlag von Theodor Steinkopff. 1935. Price, paper cover, RM 10.—.*

DAS HEMORRHOIDALLEIDEN. *S e i n e* Komplikationen unt deren Behandlung. *By Dr. Kasper Blond and Dr. Herbert Hoff. Wien and Leipzig: Franz Deuticke. 1936. Price, paper cover, M 12.—; bound, M 14.40.*

ERGEBNISSE DER GESAMTEN MEDIZIN. By Prof. Dr. Th. Brugsch. 20 Band-Jahrgang 1935. Berlin: Urban & Schwarzenberg. 1935. Price, paper cover, RM 27.—; bound RM 30.—.

LEHRBUCH DER INNEREN MEDIZIN. *By Professor Dr. Theodor Brugsch. In Two Volumes. Third Edition. Berlin: Urban & Schwarzenberg. 1936. Price, paper cover, RM 50.—; bound, RM 55.*

THE EARLY DIAGNOSIS OF THE ACUTE ABDOMEN. *By Zachary Cope, B.A., M.D., M.S. (Lond.), F.R.C.S. (Eng.) 7th Edition. New York: Oxford University Press. 1935. Price, $3.75.*

ENDOKRINE KRANKHEITEN. Volume I of Medizinische Praxis Sammlung fur Arztliche Fortbildung. *By Dr. Hans Curschmann. 2nd Edition. Dresden and Leipzig: Verlag von Theodor Steinkopff. 1936. Price, paper cover, RM 8.—; bound, RM 9.—.*

DELAFIELD AND PRUDDEN'S TEXT-BOOK OF PATHOLOGY. *Revised by Francis Carter Wood, M.D. 16th Edition. Baltimore: William Wood & Company. 1936. Price, $10.00.*

SELECTED READINGS IN THE HISTORY OF PHYSIOLOGY. *Edited by John Farquhar Fulton, M.D. Springfield: Charles C. Thomas. 1930. Price, 5.00.*

THE SIGN OF BABINSKI. A Study of the Evolution of Cortical Dominance in Primates. *By John F. Fulton and Allen D. Keller. Springfield: Charles C. Thomas. 1932. Price, $5.00.*

GICHT RHEUMA AUFBRAUCHSKRANKHEITEN. *Edited by Prof. Dr. med. Friedrich Gudzent in Berlin. Dresden and Leipzig: Verlag von Theodor Steinkopff. 1935. Price, paper cover, RM 8.50.*

A TEXTBOOK OF ROENTGENOLOGY. The Roentgen Ray in Diagnosis and Treatment. *By Bede J. Michael Harrison, M.B., Ch.M., D. M. R.D. (Cantab.), F.A.C.R. Baltimore: William Wood & Company. 1936. Price, $10.00.*

THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS. A Handbook for Practitioners, A Text-book for Students, Nurses and Social Workers. *By John B. Hawes, 2d, M.D., and Moses J. Stone, M.D. With a Foreword by Richard C. Cabot, M.D. Philadelphia: Lea & Febiger. 1936. Price, $2.75.*

YOU MUST EAT MEAT. Fancies, Foibles and Facts About Meat. *By Max Ernest Jutte, M.D. New York: G. P. Putnam's Sons. 1936. Price, $2.00.*

KLINISCHE FORTBILDUNG. *By Prof. Dr. Georg Klemperer. 3 Jahrgang 1935. Berlin: Urban & Schwarzenberg. 1935. Price, paper cover, RM 30.—; bound, RM 35.—.*

THE FOOT. *By Norman C. Lake, M.D., M.S., D.Sc. (Lond.), F.R.C.S. (Eng.). Baltimore: William Wood & Company. 1935. Price, $4.50.*

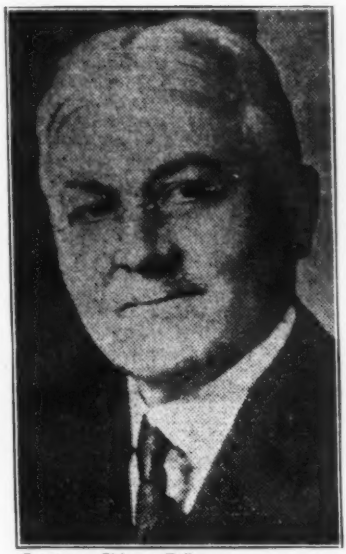
KOLLOID-FIBEL FUR MEDIZINER. *By Dr. Raphael Ed. Liesegang. Dresden and Leipzig: Verlag Von Theodor Steinkopff. 1936. Price, paper cover, RM 1.—.*

LOBAR PNEUMONIA AND S E R U M THERAPY. With Special Reference to the Massachusetts Pneumonia Study. *By Frederick T. Lord, M.D. and Roderick Heffron, M.D. New York: The Commonwealth Fund. 1936. Price, $1.00.*

MANSON'S TROPICAL DISEASES. A *Manual of the Diseases of Warm Climates. Edited by Philip H. Manson-Bahr, D.S.O., M.A., M.D., D.T.M. etc. 10th Edition Revised. Baltimore: William Wood & Company. 1936. Price, $11.00.*

SOCIAL SECURITY. *By Edward H. Ochsner, B. S., M. D., F.A.C.S. Chicago: The Social Security Press. 1936. $ .50.*

MEDICAL NEWS



Courtesy, *Chicago Tribune.*

Dr. Crile Collects Glands

THE original and fascinating work which Dr. George W. Crile, of Cleveland (whose picture appears above), has been doing with the endocrines for the past few years has necessitated a study of the brains, thyroids, adrenals and other glands of a wide variety of animals; so he went to Africa, where the fauna is still rich and diversified, in order to collect them. He has recently returned from that expedition, on which every common type of animal from the mouse to the elephant, was killed and dissected in camp. He shot the elephant himself, but did not waste his time on lesser beasts.

$1,000 For Research

SO much controversy has recently been raised over the effects and therapeutic value of the polyvalent antibacterial agent, Edwenil, that the manufacturers, eager to see the question settled one way or another, are offering, to any registered physician in the United States, a prize of $1,000 for the best confirmed, documented, and published report of clinical or laboratory research with this product during 1936, which will show that the claims made for it are either sound or erroneous.

The manufacturers, Spicer and Co., Glendale, Calif., will furnish without cost, to serious workers, any reasonable quantity of Edwenil for carrying out the necessary studies.

Here is a chance for someone with the taste and equipment for and a knowledge of the methods of research to earn some real money. A sincere and active general clinician is just as apt to win this prize as is a laboratory man.

Fifty Years in Pharmacy

THERE is scarcely a physician in the country who is not familiar with the name of **Dr. H. K. Mulford** (Doctor of Pharmacy, Philadelphia College of Pharmacy and Science), first as the motivating force of the H. K. Mulford Company, and later through the National Drug Company and Mulford Colloid Laboratories, and all who know him personally are glad to have had that opportunity.

A testimonial dinner was recently tendered to Dr. Mulford in Philadelphia on the golden anniversary of his entrance into the profession of pharmacy, most of those years having been spent in a sincere and successful effort to furnish the medical profession with re-

liable drugs and biologicals. He was the first to distribute diphtheria antitoxin to physicians through the pharmacists.

Dr. Mulford is still actively at work every day and pursuing his valuable "hobby" of pharmaceutical and biologic research.

Medical News Pictures

WE are eager to present to our readers items of timely medical news which will be of general interest, accompanied by clear, "snappy" pictures.

To any reader of this Magazine who will send us such a picture, printed in black and white on glossy paper and accompanied by a *brief* note describing it, which we can use, we will give a year's subscription to "C. M. & S.," or will advance his subscription date on our records one year.

The Advertisements are NEWS! Read and use them.

A. M. A. Meeting

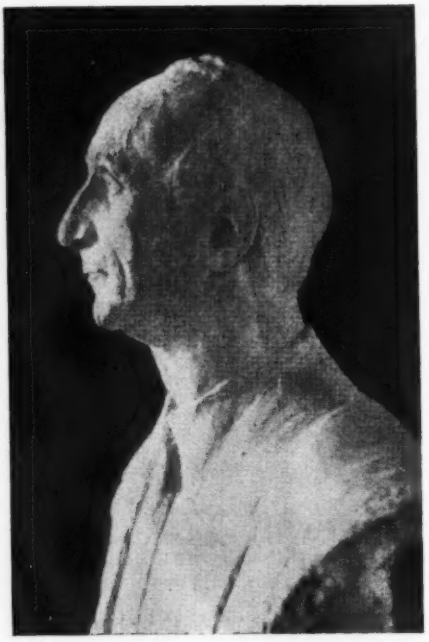
THE American Medical Association will hold its eighty-seventh annual session at Kansas City, Mo., May 11 to 16, inclusive, 1936.

This is always an important meeting, if it meant no more than studying the extensive and instructive exhibits and meeting the interesting men and old friends who will be there, and as Kansas City is right in the center of the country there ought to be a big attendance. Make hotel reservations *now!*

CLINICAL MEDICINE AND SURGERY is a fine magazine.—DR. R. S. Z., Ohio.

Venereal Disease Information

THE U. S. Public Health Service sends out monthly a publication called *Venereal Disease Information*, in which the most important literature on every phase of the subject is presented in brief, easily-read abstracts, with an index in the December number. The price is the purely nominal sum of 50 cents a year. Every physician who is concerned in any way with these diseases should immediately send 50 cents to the Superintendent of Documents, Government Printing Office, Washington, D. C., and get his name on the mailing list.



Courtesy, *Medical Life.*

Dr. Flexner Retires

DR. Simon Flexner, who has been director of the laboratories of the Rockefeller Institute for Medical Research since its opening in 1903, has recently resigned his position, at the age of 72 years.

Dr. Flexner was a lieut. colonel in the Medical Corps of the U. S. Army during the World War, and later became a colonel and assistant surgeon general in the U. S. Public Health Service. He has done important work in bacteriology and pathology, especially on epidemic encephalitis, and was the first to use meningococcus antitoxin.

Dr. Raymond Joins Pharmaceutical Research Staff

ALBERT L. RAYMOND, Ph.D., for nine years with the Rockefeller Institute of Medical Research, has resigned from the institution to become director of the research laboratories of G. D. Searle and Co. He feels that the search for new and better medicaments for clinicians is more important than purely academic studies.